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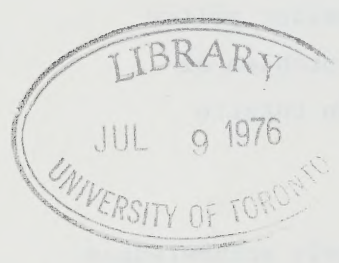
URBAN
TRANSPORTATION
FOR THE DISABLED

P R E F A C E

This report is submitted to the Ministry of Transportation and Communications in fulfillment of Peat, Marwick and Partners' assignment to conduct surveys and transportation analysis, formulate cost estimates, and consider policy alternatives with respect to the problem of transportation for the disabled in Ontario municipalities.

Peat, Marwick and Partners sincerely acknowledges its appreciation for the time and effort by hundreds of officials of disabled organizations, those who were interviewed, and the interviewing and field research staff in Metro Toronto and five other cities in Ontario. Appreciation is also expressed for the counsel of the Inter-ministerial Committee established for the study consisting of Mr. David Garner of the Ministry, Mrs. Stella Tate of the Ministry of Health, and Mr. Otto Gerandas of the Ministry of Community and Social Services.

CONTENTS



The following is a list of the titles of the books and pamphlets in the collection of the University of Toronto Library. The titles are arranged in alphabetical order of the author's name. The titles of the books are given in full, and the titles of the pamphlets are given in full or in abbreviated form. The titles of the books are given in full, and the titles of the pamphlets are given in full or in abbreviated form. The titles of the books are given in full, and the titles of the pamphlets are given in full or in abbreviated form.

ONTARIO MINISTRY OF TRANSPORTATION AND COMMUNICATIONSURBAN TRANSIT FOR THE DISABLEDTABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| <u>INTRODUCTION AND SUMMARY</u> | I-1 |
| Data Base | I-1 |
| Existing Transportation Practices | I-3 |
| Present Government Policies | I-5 |
| Experience Outside Ontario | I-7 |
| Vehicles and Equipment | I-9 |
| Basic Options to Improve Transportation | I-11 |
| Policy Issues | I-14 |
| Alternative Policy Directions | I-17 |
| <u>PROFILE OF THE DISABLED IN URBAN ONTARIO</u> | II-1 |
| The Physically Handicapped Person | II-1 |
| Number of People with Mobility Problems | II-5 |
| Summary | II-17 |
| <u>EXISTING SERVICES, POLICIES AND EXPENDITURES</u> | III-1 |
| Existing Services | III-1 |
| Existing Policies and Expenditures | III-10 |
| Conclusions from Existing Services and Policies | III-19 |
| <u>VEHICLES DESIGNED FOR THE DISABLED</u> | IV-1 |
| Overall State-of-the-Art | IV-1 |
| Special Vans | IV-5 |
| Minibuses | IV-7 |
| Regular Transit Buses | IV-10 |
| Self-Drive Vehicles | IV-13 |
| Station Accessibility | IV-17 |
| Summary and Conclusions | IV-19 |

TABLE OF CONTENTS

- 2 -

| | |
|--|--------|
| <u>RESULTS OF TRAVEL BEHAVIOUR SURVEYS</u> | V-1 |
| Survey Characteristics | V-1 |
| Degree of Disability | V-3 |
| Socio-Economic Status | V-5 |
| Transportation Problems | V-7 |
| Existing Travel Behavior | V-12 |
| Trips Outside the City | V-15 |
| | |
| <u>TRANSPORTATION ANALYSIS: DEMAND AND COST ESTIMATES</u> . . . | VI-1 |
| Existing Travel by User Groups | VI-1 |
| Definition of Future Transportation Options | VI-5 |
| Demand Estimates for Transportation Options | VI-11 |
| Urban Ontario Demand Estimates for Transportation Options | VI-19 |
| Cost Estimates for Transportation Options | VI-22 |
| Adaptation of Automobiles | VI-29 |
| Interpretation of Demand and Cost Estimates | VI-32 |
| Summary | VI-39 |
| | |
| <u>POLICY ALTERNATIVES AND IMPLICATIONS</u> | VII-1 |
| Policy Issues | VII-1 |
| General Rationale for Assistance | VII-3 |
| Disabled User Groups | VII-6 |
| Transportation Service Options | VII-10 |
| Implementation | VII-22 |
| Alternative Policy Directions | VII-26 |

EXHIBITS

| | | |
|-------|---|-------|
| II-1 | Number of Physically Handicapped as Recorded by Major Organizations in Six Cities | II-10 |
| II-2 | Total Number of Disabled with Mobility Problems in Ontario Cities | II-11 |
| III-1 | Summary Chart of Transportation Services for the Disabled in Selected Ontario Cities | III-3 |
| III-2 | Summary of Existing Special Services in Western Canada | III-6 |

TABLE OF CONTENTS

- 3 -

| | | |
|--------|--|--------|
| III-3 | Summary of Selected Existing Special Services in U.S.A. Cities | III-7 |
| III-4 | Swedish Survey of Special Services Provided by Municipalities | III-9 |
| III-5a | Provincial Expenditures for Transportation of the Disabled (1973-74) | III-11 |
| III-5b | Provincial Expenditures for Transportation of the Disabled (1973-74) | III-11 |
| III-6 | 1973-74 LIP Projects Providing Transportation Service to Elderly and Handicapped in Ontario . . | III-14 |
| IV-1 | Van and Bus Characteristics | IV-2 |
| IV-2 | Special Van Adaptation Procedures | IV-5 |
| IV-3 | Special Van Costs | IV-6 |
| IV-4 | Proposed Changes for Front of Typical Bus OC Transpo | IV-11 |
| V-1 | Characteristics of the Three Surveys | V-1 |
| V-2 | Disabilities Represented in Each Sample | V-4 |
| VI-1 | Breakdown of Survey Respondents in Terms of Transportation Limitation | VI-2 |
| VI-2 | Existing Daily Trips Per Handicapped Person ¹ . . . | VI-4 |
| VI-3 | Market Share of Each Transportation Mode by Transportation Limitation | VI-5 |
| VI-4 | Transportation Options Related to User Group . . . | VI-5 |
| VI-5 | Survey Questions Regarding Improvements to Existing Systems | VI-9 |
| VI-6 | Present and Future Trip Rates for Transportation Options by User Group | VI-10 |
| VI-7 | Future Market Share By Transportation Option and User Group | VI-11 |
| VI-8 | Demand Estimates for Improvements to Existing Services | VI-12 |
| VI-9 | Demand Estimates for New Transportation Services . | VI-15 |
| VI-10 | Vehicle Estimates for New Transportation Services | VI-16 |
| VI-11 | Urban Ontario Daily Demand | VI-19 |
| VI-12 | Summary of Costs for New Transportation Services Surveyed Population | VI-26 |
| VI-13 | Urban Provincial Cost Estimates for Unlimited Services | VI-26 |
| VI-14 | Adapted Auto Interest (From Mail-Out) | VI-30 |
| VI-15 | Revised Demand and Cost Estimates for Selected New Service Option | VI-38 |
| VI-16 | Logic of Transportation Analysis | VI-39 |

TABLE OF CONTENTS

- 4 -

| | | |
|-------|---|--------|
| VII-1 | Possible User Groups | VII-9 |
| VII-2 | Cost Estimates for Special Van/Taxi New Service Option ¹ for All Disabled Unable to Use Public Transit | VII-16 |

TABLES

| | | |
|-------|--|--------|
| II-1 | Metro Toronto (2,085,000) Number of Physically Handicapped as Reported by Organizations Serving the Disabled | II-11 |
| II-2 | Metro Toronto (2,085,000) Revised Figures for Metro Toronto to Account for Particular Gaps in Organizations' Figures | II-11 |
| II-3 | Thunder Bay (112,000) Number of Physically Handicapped as Reported by Organizations Serving the Disabled | II-11 |
| II-4 | Sarnia (58,000) Number of Physically Handicapped as Reported by Organizations serving the Disabled | II-11 |
| II-5 | Timmins (35,000) Number of Physically Handicapped as Reported by Organizations serving the Disabled | II-11 |
| II-6 | Windsor (257,000) Number of Physically Handicapped as Reported by Organizations serving the Disabled | II-11 |
| II-7 | Kingston (59,000) Number of Physically Handicapped as Reported by Organizations serving the Disabled | II-11 |
| III-1 | Metro Toronto | III-3 |
| III-2 | Windsor | III-3 |
| III-3 | Thunder Bay | III-3 |
| III-4 | Kingston | III-3 |
| III-5 | Sarnia | III-3 |
| III-6 | Timmins | III-3 |
| III-7 | Transportation Expenditures for Metro Toronto Paid by Non-Government Organizations | III-13 |
| V-1 | Mobility Limitation Status | V-3 |
| V-2 | Breakdown of Survey Respondents in Terms of Transportation Limitations | V-3 |
| V-3 | Length of Disability | V-3 |
| V-4 | Special Aids Used | V-3 |

TABLE OF CONTENTS

- 5 -

| | | |
|------|---|------|
| V-5 | Age | V-6 |
| V-6 | Income | V-6 |
| V-7 | Current Activity Status | V-6 |
| V-8 | Living Arrangements | V-6 |
| V-9 | Attitudes Towards Disabled | V-6 |
| V-10 | Age Distribution - Disabled vs. General Population | V-7 |
| V-11 | Income Distribution - Disabled vs. General Population | V-7 |
| V-12 | Employment - Disabled vs. General Population . | V-7 |
| V-13 | Taxi Usage | V-7 |
| V-14 | Bus Usage and Problems | V-9 |
| V-15 | Bus Usage - Mail-Out Survey | V-9 |
| V-16 | Subway Usage vs. Bus Usage | V-10 |
| V-17 | Commercial Van Usage | V-11 |
| V-18 | Problems with Commercial Van Service - Mail-Out | V-1 |
| V-19 | Auto Drivers | V-12 |
| V-20 | Distribution of Return Trip Purposes | V-13 |
| V-21 | Distribution of Existing Trips by Mode | V-13 |
| V-22 | Existing Daily Trip ¹ Rates for Each Mobility Limitation Category | V-13 |
| V-23 | Dominant Mode for Each Trip Purpose | V-13 |
| V-24 | Dominant Mode for Each Mobility Limitation Category | V-13 |
| V-25 | Dominant Purpose for Each Mobility Category . . | V-13 |
| V-26 | Reasons for Activity Limitations. | V-14 |
| V-27 | Frequency of Trips Outside the City | V-15 |
| V-28 | Mode for Trips Outside the City | V-15 |
| V-29 | Problems with Intercity Travel | V-15 |

APPENDICES

A. Survey Methodology and Approach



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I - INTRODUCTION AND SUMMARY

Peat, Marwick and Partners was commissioned by the Ministry of Transportation and Communications of Ontario to undertake travel behaviour surveys and to study how to improve the urban transportation services for the physically disabled in Ontario.

The objectives of the study were as follows:

1. To define the kind of special transit services which would accommodate the needs of various types of physically handicapped persons.
2. To determine the extent to which the need for special services for the physically handicapped are currently being satisfied, and the need for additional services.
3. To research and investigate alternative service options and their costs.
4. To examine various subsidy policy options and estimate the cost for the whole of Ontario.

This chapter summarizes the study, while the rest of the chapters elaborate on various aspects of it.

DATA BASE

During the course of the study research efforts were undertaken to obtain data on the experience of other cities, provinces and countries. Also examined were existing special service operations, types of equipment available, and costs of equipment and special services.

To provide a data base of the number of disabled with transportation problems in Ontario, and their existing and future travel demand, the following surveys were undertaken:

1. Organizations

Survey of organizations serving the disabled in six different size cities in Ontario, which are, in descending order of population: Metro Toronto, Windsor, Thunder Bay, Kingston, Sarnia, Timmins. The purpose was to obtain the numbers of disabled served by those organizations, and an estimate of how many of them had transportation problems due to their disabilities.

2. Metro Toronto

Personal interview, structured survey of 292 Metro Toronto disabled, whose sample included a proportional representation of each disability group in Metro Toronto. The purpose was to obtain existing travel behaviour of the disabled, their transportation problems, and possible future travel demand given additional or improved services.

3. Other Cities

A similar survey of 306 disabled people with virtually the same questionnaire for the five other cities mentioned above; the sample was designed to include an equal representation from each of the following groups: those who must use special vehicles, those who could be driven but cannot take public transportation, and those who can use public transportation with difficulty.

4. Mail-Out

A mail-out questionnaire survey to a random sample of four lists of disabled people, as follows: Vocational Rehabilitation and Family Benefits Branches of the Ministry of Community and Social Services, Workmen's Compensation Board, and the Rehabilitation Foundation (a private organization). The purpose of this survey was to provide a larger base of respondents (about 2,100 usable replies), and to include disabled in urban areas across the province.

The results of these surveys and research efforts formed the data base for the study.

EXISTING
TRANSPORTATION PRACTICES

Number and Travel
Behaviour of Disabled

The terms "physically handicapped" and "disabled" are used interchangeably. For the purpose of the study, we have included the mentally retarded along with the disabled population, since, in many cases, they have the same transportation problems and needs as the "physically" handicapped.

Approximately 7% to 8% of the provincial population is physically disabled. Our research indicates that at least 3% of the Ontario population either cannot use, or have problems in using, the public transit systems in urban centres.

For the purpose of the analysis, we divided the physically handicapped with mobility problems into three categories and, based on the organizations' and personal interview surveys, we estimated the disabled Ontario urban population in each, as follows:

- those disabled who are principally confined to wheelchairs and who are best transported by a special van equipped with proper loading facilities - 15,700
- those people who do not need a special van but who cannot use public transportation - 55,600
- those people who can use public transit but have some difficulty in doing so - 80,200.

From our surveys, it was found that the physically handicapped on the average travel about half as frequently as the general population. They have a more even distribution of trips throughout the day than the general population, although there is some peaking at rush hours. They tend to have a much higher use of taxis and much lower use of public transit.

Deficiencies in
the Present System

The problems of the disabled in coping with the existing transit system are perhaps obvious. It is very difficult, or impossible, for many to negotiate the trip from origin to destination via the regular transit system.

If the transit system is difficult or impossible to use, special services, such as taxis or commercial vans that can accommodate wheelchairs are available, but are comparatively very expensive. Transportation of disabled schoolchildren is the only major area which is public-supported.

Since the disabled are overrepresented among the under-18 and the over-65 populations, and since those between these two age groups have difficulty in finding regular employment, physically handicapped people are relatively economically deprived. Our surveys showed that less than half of the disabled had family incomes of over \$3,000 per annum. Therefore, the expense of taxi and special van services is even more of a burden to the physically disabled.

Volunteers to drive or otherwise transport physically disabled people are only available on special occasions. Even those with families who have access to automobiles must depend on the cooperation and time of family members for their everyday transportation.

PRESENT
GOVERNMENT POLICIES

Provincial Government

Although at present there is no policy with respect to assisting municipalities in providing transportation services for the physically handicapped through transit subsidy programs, the province is a major supporter of transportation for the disabled. Approximately \$12 million per year is now spent on transportation as a result of various provincial social programs, although about half of that amount is strictly part of a transfer payment to the poor disabled. The following are the most important programs:

1. As a result of the basic legal requirement for the province to subsidize school Boards for providing transportation for the schoolchildren, about \$3.6 million of the school transportation budget is spent on grants to support the transportation of physically and mentally handicapped schoolchildren.
2. Another \$5.5 million is spent in supplemental transportation payments to about 30,000 physically handicapped people in the province receiving disability pensions.
3. The Workmen's Compensation Board spends almost \$1 million on transportation of those clients eligible for such assistance.

4. The Homes for the Aged program allocates almost \$1 million to individual Homes throughout the province for buying and operating special buses to transport the Homes' residents.
5. A variety of Community and Social Services programs, which include transportation, support children's institutions, mental, and other institutions, as well as the Vocational Rehabilitation Bureau, for a further \$1 million.

The Ministry of Health is investigating whether it should subsidize transportation services to various treatment and rehabilitation centres, but has no general policy at present to do so.

As part of its regulatory responsibilities, the Ministry of Transportation and Communications issues special licences for people who have to drive vehicles adapted for use by physically handicapped drivers, as well as generally certifying driver capability. There are presently about 700 disabled people with special driving licences.

Federal Government

The federal government has little direct interest in the transportation of the physically handicapped. The Department of Veterans' Affairs is the only line department which operates some services directly, and pays for some trips of veterans.

A recent significant development is the sponsorship under the Local Initiatives Program (LIP) of approximately 30 special van-type services in the province and more in other parts of Canada. LIP services

are only temporary, but are of particular consequence since they will tend to stimulate a demand for transportation services in the communities in which they are operating.

Local Government

At the local level, some trips by physically disabled welfare recipients are paid by municipalities, usually in programs whose costs are shared by the province.

There have been two recent developments at the local level - the sponsorship or pending sponsorship by transit authorities in Metro Toronto and the Ottawa-Carleton Regional Municipality of specific transportation services for the disabled. In Metro Toronto, the Toronto Transit Commission is undertaking a pilot program whereby those people in wheelchairs regularly employed will receive a subsidized special van service. In Ottawa, an existing LIP program designed to service the physically handicapped who cannot take transit has been taken over on an interim basis by OC Transpo. The Regional Municipality is also making minor modifications to the interior of buses to make them somewhat more accessible to the disabled.

EXPERIENCE OUTSIDE ONTARIO

Western European countries, particularly the Scandinavian countries and Great Britain, appear to have relatively more sophisticated transportation programs for the physically handicapped than in North

America. These programs are predominantly extensions of the social services provided in these countries. In Sweden, for example, most municipalities provide transportation services for the disabled, through a combination of subsidies to taxis, subsidies for adapting and acquiring private automobiles for those who meet income and driving capability criteria, and operation of special van services. The trip fare in Sweden is generally equivalent to the public transit fare; for some trip purposes, the number of trips that are subsidized are usually limited to a specific maximum monthly, like ten non-work, non-education trips per month. In Great Britain, there has been long use of special three-wheeled automobiles for disabled persons, but now the emerging policy seems to be to assist the physically handicapped person to purchase and adapt low-priced minis for their use.

In Canada, there is no province whose provincial ministry responsible for public transportation has specific programs for direct assistance to the disabled, or indirectly, through subsidies to the municipalities. In Western Canada, more use is made of charitable organizations to transport disabled schoolchildren, and these organizations tend to branch into limited services for disabled adults as well.

In the United States, in two post-war subway projects - one is partially completed (San Francisco) and the other is in the early construction stages (Washington, D.C.) - extensive capital investment has ensured access to subway platforms by the disabled by elevator. However, these special subway station facilities have largely been ad

hoc arrangements for these two cities, decided after extensive lobbying by handicapped organizations. These decisions do not constitute the official policy of the Urban Mass Transit Administration. While this agency subsidizes local transit systems and operates under legislation that stipulates accessibility of transit systems to the physically handicapped, there is no policy at this time as to how such legislation will be implemented in practice.

There are, in the United States, various demonstration projects of special transit services sponsored by UMTA and federal social agencies, although no overall policies have been set. These demonstration projects consist of special transit services for the elderly or for the physically handicapped in small urban centres, or in geographically defined parts of larger urban centres. Some specially equipped buses have been added to the fleets of buses used in dial-a-bus operations, but they have not been fully used to meet disabled transportation needs.

VEHICLES AND EQUIPMENT

Many kinds of vehicles have been developed to accommodate the physically handicapped, especially those in wheelchairs. In almost all cases these vehicles are adapted to use for the disabled, and are not manufactured as standard equipment. Therefore, special vehicles equipped to transport the disabled are more expensive than vehicles mass-produced.

The vehicles most commonly used are as follows:

1. The converted van or maxivan that can carry 5 to 13 passengers, and is equipped with ramps, or a hydraulic or electro-mechanical lift. Standard vans are converted, with some or all of their seats removed and roofs raised. Modifications may comprise a third to half the total cost of the vehicle, costing in total \$9,000 to \$12,000 (depending on options selected).
2. Minibuses, accommodating 15 to 25 people with 4 to 5 spaces for wheelchairs and electro-mechanical lifts, are now being offered as optional conversions to standard minibuses. They cost approximately \$2,500 more than the standard minibus.
3. Larger buses, commonly used for regular transit, can have electro-mechanical lifts added and the interior rearranged to accommodate some wheelchair passengers, although few buses have been so converted. Some minor interior modifications, such as adding extra grab-bars and handrails can be done with little cost but without much improvement in their overall accessibility.

The new GM-RTS bus, projected to be on the market in 1976, has a slightly lower step and wider doors. Through the Trans-Bus UMTA-sponsored demonstration project in the United States, three manufacturers are attempting to radically alter the design of the standard bus to incorporate many features, including greater accessibility to the disabled. Such buses are several years away from production.

Hand controls and other special equipment can be added fairly easily to regular automobiles to enable some disabled to drive. Although far more expensive than automobiles, vans can also be adapted so that wheelchair disabled can drive them.

Transit station accessibility, particularly gaining access to the platform level of subways, remains an architectural and engineering problem in the design of stations. Although there had been some

preliminary considerations for the use of inclinators in subway stations, the elevator remains the only feasible way of providing accessibility to the severely disabled people.

BASIC OPTIONS TO IMPROVE TRANSPORTATION

The basic ways to improve transportation for the disabled are as follows:

Improvements in Public Transit

1. Improving the comfort of bus stops (a municipal function), rearranging the interior of buses to add grab-bars and handrails in buses, and designating specific seats in buses for the handicapped.
2. Marketing programs to increase physically handicapped ridership, increase flexibility in fixed-route bus service; possibly as well sensitivity training for transit drivers.

These changes might respond to some of the psychological barriers of public transit to the disabled, but would definitely be of limited value in improving overall accessibility.

3. For Metro Toronto, provide vertical accessibility to subway platforms, in new and old stations, through escalators, inclinators, or elevators. It is the present TTC policy to upgrade accessibility through escalators, while elevator access is under examination. Inclinators are not being considered, largely because they remain commercially unavailable.

Escalator access will give many disabled people greater use of the subway system; inclinator/elevator installations would make it possible for more people in wheelchairs to reach the platform level, but the problem remains of getting to and from the subway station and in actually riding in the subway cars.

New Special Services

1. Provision of a special van service with vehicles designed to accommodate wheelchairs, and which would also carry ambulatory passengers accompanying wheelchair passengers. The service would be by a pre-booked and some demand-responsive basis, and provide door-to-door service.

Such a service could be directed primarily towards those people requiring special vans or personal service beyond that which can be expected of a taxi driver, or could be extended to accommodate (a) other disabled who could not use public transit, and (b) those who could use public transit with difficulty.

2. Provision of a taxi-type service, which would be door-to-door and primarily demand-responsive, using regular automobiles.

Such a service could complement the special van service and be suitable for those who do not need a special van but cannot use public transportation, and possibly those who use public transit with difficulty.

Subsidized
Existing Services

1. Increased financial resources could be placed in the hands of the disabled to defray costs of privately-run special van and regular taxi services.

This financial assistance would help low-income disabled to have access to special vans, and others who can use taxis.

2. Financial assistance could be provided to a public or non-profit social agency to defray costs of privately-run special van and taxi services.

This kind of financial assistance could be provided by cities to complement a special van service that is restricted to those who need a special van. In this way, people who are unable to use public transit could use a special van service, or have their taxi trips subsidized.

3. Assistance to acquire regular automobiles, equip them with hand controls or other adaptations, and to undergo driver training.

Such a program would build on the motivation of disabled individuals to be independent, and possibly also reduce demand for a special van service, since eligible disabled might prefer instead to drive their specially equipped automobiles.

Costs for New
Special Services Options

The costs of new special services depend on the number of disabled, the number of municipalities that would introduce these new services, and the extent to which the disabled could be attracted to the new services. Based on the surveys and assumptions as to their results, and research into costs, estimates have been made as to what the total annual capital and operating cost could be if all municipalities in Ontario over 10,000 in population establish special services at 30¢ fare level.

The estimates for the least expensive service option for the disabled who cannot use public transit is \$18 to \$20 million annually for the province. Such a service would provide special vans for those that needed them and a taxi-type service for the remainder of the disabled who cannot use public transit. The cost per trip would be about \$6.50 for special van and \$3.50 for a taxi-type service.

These costs are total costs, which would presumably be shared by the province and municipalities in a cost-sharing formula to be

determined. In addition, these costs would be offset by a modest revenue, assuming a fare of 30¢ or some equivalently low sum.

The actual cost of implementing special transit programs for the disabled can be reduced by limiting the eligibility of the user - e.g. by trip purpose, number of trips, or degree of disability; it can also be done by limiting the service level or by instituting a higher fare structure. The data base produced by this study can be used to assist in costing several alternative sets of implementation procedures.

POLICY ISSUES

The setting of policy must be placed in context with the cost of the program. Cost estimates for new services were outlined above, and can be compared to the current level of direct spending by the province of about \$55 million on transit subsidies to municipalities.

The first policy question is whether there is a need for improved or new transit services. In the study, we conclude that there is such a need.

The second question is if assistance is provided, what part of the physically handicapped population should receive this assistance. The most appropriate group would seem to be the most severely disabled (i.e. those who cannot use public transit), since their needs on an individual basis are greater than the less severely disabled.

In considering improvements to existing transit services, new services, and subsidies to existing commercial services, it is suggested that new special services be established, complemented by subsidization of taxi trips for the disabled who cannot use public transit, where appropriate. It is suggested that some effort might be directed toward improving the existing transit system, although the issue of providing elevators to the Metro Toronto subway system should really be separated from the mainstream of disabled transportation programs. The latter solution is expensive and assists relatively few people, but may be appropriate on political criteria.

In terms of administrative policy, the major question is which provincial ministry should be responsible for the thrust of the new services and improvements of existing transit services programs. Since it is a transportation problem that is, or can be, linked to the transportation of the regular public, it is suggested that the Ministry of Transportation and Communications be provided a mandate to undertake the required programs. However, if the transportation solutions are viewed as extensions of social policy, the Ministry of Community and Social Services could undertake the responsibility for establishing new services or subsidizing disabled people and social organizations to defray transportation costs.

The key requirements in a program to establish social services are (a) sufficient financial and technical support to municipalities to induce them to participate in a special transit program, and (b) flex-

ible guidelines for municipalities to establish disabled transportation services according to their own perceived requirements.

The Ministry of Transportation and Communications' responsibilities could be to establish cost-sharing procedures, initial budget ceilings, and service guidelines for municipalities. The Ministry of Community and Social Services could best support MTC through assistance at the local level in stimulating municipal participation and planning for the appropriate new services in particular communities. Community and Social Services could also establish on a province-wide basis a program to adapt automobiles for use by the disabled.

To implement the disabled transportation programs, MTC should establish financial arrangements, interim service guidelines, and possibly underwrite the early municipal projects as demonstration programs.

ALTERNATIVE
POLICY DIRECTIONS

In the concluding chapter we suggest three basic alternative directions for the province, as follows:

- new special services for all the disabled with transportation problems
- limited, but substantial, funding of disabled transit service programs that would allow for experimentation and the further development of policies
- little action at present, which would incur the risk of political ad hoc decisions forcing the province to establish undesirable programs applicable to all municipalities.

It is proposed that the province adopt the second option, given the lack of knowledge and experience to undertake a full-scale program at this time, and the continued likelihood of increased political action by disabled groups to initiate some provincial response.

II - PROFILE OF THE DISABLED IN URBAN ONTARIO

In planning for improved transportation services for the disabled, it is important to understand who they are, and for estimating the market for new or improved services, how many of them live in the urban parts of Ontario. In this chapter, we define who we mean when the terms "disabled" or "physically handicapped" are used and estimate their total number in urban Ontario.¹

THE PHYSICALLY HANDICAPPED PERSON

The physically handicapped for the purposes of this study are defined as people who have mobility problems and, therefore, cannot use the public transportation system or have difficulty using it. Some examples are:

- an elderly person with arthritis, or heart or respiratory problems, who has difficulty climbing stairs, getting on or off buses, and in standing in moving vehicles
- a person with cerebral palsy or other disease of the nervous system who can walk with great difficulty, with aids but is too unsteady to use the public transportation system on a regular basis alone, and has difficulty in hailing a taxi
- a mentally retarded person who is physically able, but cannot travel unaccompanied

1. "Physically Handicapped" and "Disabled" are used interchangeably in this report. "Disabled" is actually more precise, since we include the mentally handicapped as well as the physically handicapped.

- a person suffering from epilepsy who has no problems travelling except that for the occasional seizure with which bus drivers and other passengers cannot cope because of a lack of familiarity with the problem
- a person with a speech defect, or who is deaf, and cannot easily communicate with bus and taxi drivers
- a person with paraplegia, multiple sclerosis or some other crippling disease or accident that confines him to a wheelchair
- a blind person who is travelling in unusual surroundings, in winter, or in a public transportation system with confusing textures or where the driver does not call out the stops
- a person who is temporarily disabled due to an accident or illness, and who has difficulty coping with the public transportation system
- a person with a combination of physical handicaps, since many people suffer from more than one disability.

This definition of the physically handicapped person stems directly from the purpose of this study which is to address the transportation problems of physically handicapped in Ontario cities. It is comprehensive since it includes all types of disabilities of a temporary nature; it is restrictive since it includes only the disabled with mobility problems.

This definition still has some practical problems and some explanation is provided to indicate how it was interpreted for the purposes of this study.

Those Who
Are Included

The disabled include the following:

- all physical disabilities, and also the mentally retarded. These people may have no physical handicaps but have much the same mobility problems as the physically handicapped
- those in certain institutions, primarily elderly institutions, and those confined to hospitals and other treatment centres. Transportation requirements for many of these people may be low, but they do have mobility problems
- those who have mobility problems because they are temporarily physically handicapped, as a result of some disease or accident. This would include those who require hospital treatment, as well as those treated outside a hospital. It is recognized that temporarily disabled people generally have less of a problem than permanently disabled, since short-term transportation arrangements are more feasible than long-term ones
- the elderly are included provided they are physically disabled for there are many elderly with no mobility problems. It is estimated that about a third of the population over 65 is restricted in their mobility because of physical handicaps. However, it is acknowledged that there is, sometimes, no clear distinction between the aging process and specific disability for the elderly. Therefore, a fairly generous definition of a physically handicapped person would include the elderly who are disabled, as well as those who just feel they are slowing down.

Those who are Excluded

We do not include among the disabled the following:

- those who have psychological problems (i.e. no brain damage) with certain aspects of transportation are not included, unless they are in some way

physically handicapped as well. Such problems of a purely psychological nature might include fear of crowding or fear of being robbed or molested

- women in the latter stages of pregnancy may have difficulties with the transit system, climbing stairs, etc; however, this is a natural state of being and pregnant women are not included among the physically handicapped; nor are obese people considered part of the physically handicapped population
- inebriates and people on drugs. It is believed that these people have self-induced temporary disabilities which may lead to mobility problems, but whose particular solutions are unique
- transportation barriers for the illiterate or non-English speaking people are presumed to be related to improved information programs, rather than to new or improved transportation services. These people and those encumbered with luggage or with children are not to be included as part of the physically handicapped population
- another important exclusion are those who are economically handicapped, who are restricted in their low mobility because of their low income. Others may have special transportation problems because of deficiencies of public transportation services, such as the wives of low-income families in suburban communities, or children too young to travel unaccompanied.

Some of these distinctions may be somewhat arbitrary, but the intent is to focus on those people who are clearly disabled on a permanent basis. Some of the above would be beneficiaries of improvements to the existing public transportation system (as we would all be). Others could be either included or excluded as part of those eligible for special transportation services designed for the handicapped, subject to future policy decisions.

NUMBER OF PEOPLE
WITH MOBILITY PROBLEMS

The basic problem in estimating the number of physically handicapped people in Ontario is that it is the number of disabled with mobility problems in urban areas that is important, rather than the total number of the disabled in Ontario. While there may be x thousand physically handicapped people in all of Ontario, there is a sub-set of x thousand whose disability causes them transportation problems in urban centres. The problem is, therefore, to determine how many physically handicapped have mobility problems due to their physical handicap and how many of them live in urban centres in the province.²

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2. Extensive surveys of the general population have been conducted in Canada (10,000 households), the U.K. (83,000 households), and the U.S. (84,000 households) to determine the incidence of major disabilities in the general population. Such surveys, each with various definitions and sampling procedures appear to identify about 7% to 8% of the general population being physically handicapped, or 550,000 to 700,000 in Ontario.

As a matter of comparison, some groups of physically handicapped people that the Province of Ontario provides assistance to are as follows:

- 34,000 people currently receive disability pensions from the Family Benefits Branch of the Ministry of Community and Social Services. These people are in need of financial assistance and are physically handicapped or mentally retarded
- 3,000 people currently receive maintenance allowances from the Vocational Rehabilitation Branch of the Ministry of Community and Social Services. Approximately 54% of these are emotionally disturbed as opposed to 46% who are physically disabled
- 400,000 claims per year are received by the Workmen's Compensation Board, while 7,500 people are on the permanent disability lists.
- 50,000 people (approx.) are currently in provincially-sponsored homes for the aged, nursing homes, and OHC units for the disabled. These people have a combination of physical disability and economic problems.

Approach to
Estimating Total Numbers

The essence of the numbers problem is to estimate the number of physically handicapped who have mobility problems. After some research into the matter, it was concluded that there are three basic approaches to obtaining more accurate estimates of the number of physically handicapped with mobility limitations. They are as follows:

- A. Estimates based on the surveys of the general population identifying the incidence level of major disabilities, i.e. the household survey results.
- B. A random sample survey of the general population, specifically with the objective of obtaining estimates of the disabled with mobility limitations.
- C. Survey of the organizations serving the physically handicapped to determine their estimates of the number of disabled with mobility problems.

Approach A:
Past Surveys

As mentioned earlier, there have been extensive household surveys of the general population to reveal the incidence of various disabilities in the general population. However, the Canadian³ and U.S.⁴ surveys provide very limited information with respect to mobility, and are, therefore, not usable. On the other hand, the British⁵ survey did

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3. "Canada Sickness Survey", Dominion Bureau of Statistics, 1951.
 4. "Age Pattern in Medical Care, Illness and Disability, U.S. July 1963-June 1965", U.S. Public Health Service.
 5. "Handicapped and Impaired in Great Britain", Office of Population Censuses and Surveys Social Survey Division, 1969.

specifically ask questions related to mobility. Responses were classified according to the following categories:

- get out on own, no aids or difficulty
- get out on own, with aids
- get out only if accompanied
- get about house with mechanical aids
- chairfast
- bedfast.

The problem with using the British survey results to define the numbers of physically handicapped for transportation planning purposes (apart from the possible lack of applicability to Ontario) is that the survey did not go one step further. Questions about mobility were not related to transportation needs. For example, it was not specifically asked how many people need a special vehicle for transportation, how many people do not need a special vehicle but cannot use public transportation, and how many people use public transportation with difficulty. These are the classifications of mobility restrictions that are more directly useful to transportation planning.

Approach B:
General Survey

Since existing household surveys do not provide the desired estimates, one approach to deriving the number of physically handicapped in transportation-related mobility classifications is to survey a large

enough sample of the general population asking specific transportation-related questions. This approach has been used in at least three documented cases.⁶

The results of past surveys aimed specifically at transportation were judged to be insufficient to extrapolate to Ontario. A more rigorously organized survey of the general population was seriously considered as part of this transportation planning study. It was rejected on the basis that to undertake such a survey with sufficient accuracy would be too expensive in relation to the usefulness of such accurate information.

Approach C: Physically Handicapped Organizations

It was concluded that Approach C - a survey of organizations serving the physically handicapped - would be the most cost-effective method of estimating the number of physically handicapped with mobility problems. Therefore, each charitable organization serving a particular disability group was asked to provide the number of those people who could be visibly identified in that disability category, and the number of those who had mobility problems. "Visibly" identify means those on mailing lists or otherwise recorded by the organization.

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6. In London, Ontario, everyone in the London telephone directory was telephoned under the auspices of a LIP grant, simply to identify disabled people for further interviews. In Ottawa, a mail survey to nearly 5,000 homes in a particular geographic area in the city was undertaken, also under a LIP grant. An attempt was made to estimate the potential demand for a special transportation shared service in Ottawa from this survey. A third survey was conducted in Washington for the Washington Metropolitan Transportation Authority, in which about 5,000 households were telephoned and asked to indicate whether there were severely handicapped people living in those households. Suitable respondents were interviewed in further depth about transportation problems.

Wherever there were no organizations, or where organizations representing disability groups were unable to visibly identify their "clients", estimates of people in that disability category were made. To make these estimates, we had to refer to incidence level statistics derived from the household surveys cited above. For example, some associations in Metro Toronto were unable to identify the number of mobility limited people, e.g. heart ailments, arthritis, and respiratory or tuberculosis disabilities. Estimates for these disabilities were made based on the general incidence level of these disabilities. Obvious gaps understating specific major disabilities by charitable organizations were covered in this way.

A survey of organizations was conducted in six cities of various sizes. The steps in the approach were as follows:

1. Survey by letter and follow-up telephone calls of charitable and non-government organizations serving the physically handicapped. This survey was conducted in Metro Toronto, Kingston, Timmins, Thunder Bay, Sarnia, and Windsor.
2. Each organization was asked to identify the number of physically handicapped served by that organization in the following categories:
 - those who cannot use public transportation, i.e. those who cannot travel by bus, subway, or streetcar
 - those who can travel by bus (or subway in Metro Toronto) but have difficulty taking the bus (or subway)
 - those who are physically handicapped but have no transportation problems.

EXHIBIT II-1

NUMBER OF PHYSICALLY HANDICAPPED AS
RECORDED BY MAJOR ORGANIZATIONS IN SIX CITIES

| Cities | Total Population | Cannot Take Public Transportation | | Can Take Public Transportation With Difficulty | | Sub-Total | | Can Take Public Transportation Regularly | | Final Total | |
|---------------|------------------|-----------------------------------|-----|--|-----|-----------|-----|--|-----|-------------|-----|
| | | Number | % | Number | % | Number | % | Number | % | Number | % |
| Sarnia | 58,000 | 682 | 1.2 | 536 | 0.9 | 1,218 | 2.1 | 715 | 1.2 | 1,933 | 3.3 |
| Thunder Bay | 112,000 | 1,724 | 1.6 | 1,490 | 1.3 | 3,214 | 2.9 | 1,385 | 1.2 | 4,599 | 4.1 |
| Windsor | 257,000 | 2,895 | 1.1 | 3,301 | 1.3 | 6,196 | 2.4 | 3,726 | 1.5 | 9,922 | 3.9 |
| Kingston | 59,000 | 905 | 1.5 | 935 | 1.7 | 1,883 | 3.2 | 955 | 1.6 | 2,795 | 4.7 |
| Timmins | 35,000 | 375 | 1.1 | 525 | 1.5 | 900 | 2.6 | 770 | 2.0 | 1,670 | 4.7 |
| Metro Toronto | 2,085,000 | 19,870 | 0.9 | 12,845 | 0.6 | 32,715 | 1.6 | 15,853 | 0.8 | 48,668 | 2.5 |

REVISED FIGURES FOR METRO TORONTO TO
ACCOUNT FOR GAPS IN ORGANIZATIONS' FIGURES

| Metro Toronto Revised | Cannot Take Public Transportation | | Can Take Public Transportation With Difficulty | | Sub-Total | | Can Take Public Transportation Regularly | | Final Total | |
|-----------------------|-----------------------------------|-----|--|-----|-----------|-----|--|-----|-------------|-----|
| | Number | % | Number | % | Number | % | Number | % | Number | % |
| | 28,182 | 1.4 | 37,128 | 1.8 | 65,310 | 3.1 | 62,885 | 3.0 | 128,195 | 6.1 |

No attempt was made to separate the "bedridden" from those who cannot use public transportation, and some of the people included in this group have virtually no need for transportation. However, organizations tended to exclude among those served people who are hospitalized permanently or who are completely homebound.

3. Careful attention was paid to avoid duplication with overlapping lists. In the smaller cities, not all disability categories had organizations representing them, and some multi-disability organizations were asked to break down their numbers according to disability.
4. The estimates were of handicapped people who were visible in some form or other, e.g. on their mailing list, had been served by that organization, or identifiable in some other way. Not acceptable were unsubstantiated general estimates of the number of people with that disability by that organization serving them.

There was a problem more particular to Metro Toronto than the smaller urban centres who seem to be able to visibly identify more easily those who are physically handicapped in those communities.

5. For the disabilities that were under-represented by lack of an organization serving them in Metro Toronto, an estimate was made in consultation with people knowledgeable about that disability, primarily based on the incidence level estimates based on the household surveys in Canada, Britain and the United States.

Results of Surveys of Total Numbers

On Exhibit II-1 is a summary table of the results of the survey of organizations in six cities. This summary shows that with the exception of Metro Toronto, 2.1% to 3.2% of the total population either cannot take public transportation or have difficulty with public transportation, as reported by major organizations. The Toronto figure, as

EXHIBIT II-2

TOTAL NUMBER OF DISABLED
WITH MOBILITY PROBLEMS IN ONTARIO CITIES
(Rounded to nearest 100)

| Category of Ontario Cities | Total Population ¹ | Number Disabled To the Extent They Could Not Use Public Transportation ² | Number Disabled Who Could Use Public Transportation With Difficulty ² | Total with Transportation Problems |
|---|-------------------------------|---|--|------------------------------------|
| Metro Toronto | 2,085,000 | 28,200 (1.4%) | 37,100 (1.8%) | 65,300 (3.2%) |
| Other Five Cities Surveyed | 521,000 | 6,600 (1.3%) | 6,800 (1.3%) | 13,400 (2.6%) |
| Six Cities Results Extrapolated to all Ontario | | | | |
| - municipalities with transit authorities (including private contracts for transit) | 4,551,000 | 60,200 ³ | 69,200 ³ | 129,400 |
| - cities over 10,000 in population | 5,398,000 | 71,300 | 80,200 | 151,500 |

1. Total population for six cities includes the municipal area surveyed, which does not always conform with the municipal or regional boundaries, and thus may differ from the official populations. The remainder of the cities' population figures is derived from the 1971 Census.
2. Numbers include revised figures for Metro Toronto, since it is estimated that they are more accurate than the numbers recorded by the organizations' survey.
3. With the exception of the Metro Toronto figures, the percentages of disabled in the five other cities surveyed have been used to extrapolate to the rest of urban Ontario.

mentioned above, is under-represented since no organization could visibly estimate the number of physically handicapped in three major disability categories.

The second part of Exhibit II-1 shows revised figures on the number of physically handicapped in Metro Toronto. This has made the number of physically handicapped in Metro Toronto more consistent with the general average level of those who are experiencing transportation problems in other cities. The detailed results of the organization survey are provided in Tables 1 to 7 at the end of the chapter, showing the number of visible physically handicapped identified by the organizations in each of the six urban areas and the revised numbers for Metro Toronto.

To show the total figure for Ontario, the results of the survey of the other cities have been extrapolated to the province and to those cities with transit systems. These results are shown on Exhibit II-2 and show that 151,500 Ontario residents in cities over 10,000 in population have mobility limitations. The corresponding figures for cities with transit services is 129,400.

Survey Accuracy

The survey results represent the combined estimates and best guesses of hundreds of people and judicious use of past surveys. They are not as accurate as could be expected from an extensive household survey of the general population, but are sufficient to describe the potential market for transportation services.

Among the problems with the survey results is the recurring question of whether there are not some disabled people "hidden" from society, not counted by any organization. Such people might include an elderly person with failing eyesight, but who is too proud to register with the CNIB; or it might include a disabled person overprotected by his/her family and not registered by any organization. It is virtually impossible to find this out, except by extensive household survey. Since there are probably a number of people in this category, the survey results probably underestimate the total number of physically disabled.

Another problem is that the organizations' figures as a percent of the population varied widely from city to city. For example, those with hearing problems ranged from .06% of the population in Thunder Bay to .35% in Metro Toronto (revised). This is largely because different cities have organizations with different emphases and degrees of initiative. Some organizations, especially in smaller cities, tended to encompass many disabilities.

The discrepancies among cities for each disability group are much larger than the differences in total disabled population. Therefore, while the reported incidence of specific disabilities varies considerably, the sum total of all disabled people is roughly similar from city to city.

There are some strengths in the use of organizations' data on a collective basis. First, more than half of disabled people (according

to our survey of the disabled population) have multiple disabilities, but it appears that the vast majority of individuals have an association with only one organization. In any given community, then, the majority of the disabled are identifiable by the particular mix of charitable and social service organizations that historically serve that community.

Second, the data covers all those disability groups who have mobility problems. We checked whether there were major disabilities that might increase the number of disabled with mobility problems. Possibly, some people with diabetes or ulcers, two major disabilities not represented in the figures, might have mobility problems, but representatives of organizations serving these disabilities maintain that mobility problems do not exist for these two disabilities.

The number of disabled elderly were difficult to estimate since there are no "disabled elderly" organizations. Many of the elderly suffer from disabilities surveyed and are thus included in the estimated figures derived from the appropriate organizations. We also included homes for the aged and other elderly institutions among the organizations surveyed, and thus are reasonably confident of including the more severely disabled elderly. There remain the elderly with mobility problems who are not included in the organizations' data and who are not institutionalized.⁷

7. An attempt was made to include a large sample of elderly in the mail-out survey through the retirement pension mailing lists, but this was not possible due to prohibiting clauses in the federal statutes. Some surveys of this nature would be helpful in clarifying the incidence and type of mobility limitation among the elderly.

Age, Climate, Size
Variations Among Cities

We examined the variations among the different cities surveyed that might be attributable to age, climate, size, or other possible factors. The survey, we feel, is not sufficiently refined to draw more than general conclusions from the overall results. However, there is no conclusive evidence to disprove that the incidence of people with mobility problems is fairly uniform among cities of different sizes and geographic locations in the province. The difference between Metro Toronto and the rest of the cities is believed to be due to the estimating procedures, as outlined above.

Prior to the study, there were two conflicting hypotheses as to the results of such a survey. One hypothesis predicted that the diversity of life and the specialized medical and other services in Metro Toronto would attract the physically handicapped. The other predicted that the smaller centres would retain the physically handicapped population, since handicapped individuals probably would remain in their hometown environment within their network of friends and family. While the survey does not appear to be conclusive, it tends to support the second hypothesis, since the incidence of disabled with mobility problems appears to be roughly similar in each city.⁸ Variations on account of weather (e.g. Timmins vs. Windsor) or age distribution were examined but did not seem to affect disability incidence levels.

8. The household surveys of U.K., Canada, and U.S.A. did not examine the question of whether incidence of disability varies with size of municipality.

In summary, the problems with identifying correctly the disabled population with mobility problems are numerous. Without a rigorous, extensive household survey, the statistical accuracy of any estimating procedure will be difficult to determine. Factors which would tend to increase the numbers of disabled with mobility problems beyond our estimates include:

- exclusion of "hidden" physically handicapped population
- underestimate of elderly with no disability but with mobility limitations
- exclusion of disability groups or weak representation of disability groups in certain cities.

Factors which would tend to discount our estimates include the following:

- double counting of people with joint organizational affiliations
- possible inflated estimates by organizations of their clientele, or at least the estimate of numbers with mobility problems.

On balance, the totals of the number of disabled identified from our surveys are probably on the low side. They should be considered as minimum figures.

In Exhibit II-2, the extrapolated total for municipalities with transit systems was 138,000. While we tentatively conclude that this figure is probably low, we emphasize that it remains an estimate for general planning purposes only.

Temporarily Handicapped

The temporarily handicapped have not been fully identified through the surveys of organizations. There are no "temporarily" handicapped organizations as such, and their numbers are difficult to determine. The temporarily disabled schoolchildren with mobility problems can be singled out (there are about 3,000 to 4,000 in Ontario at any given time), since they must be transported to school through special arrangements.

Other figures are available, but are not very helpful. Admissions to hospitals are recorded (1,400,000 each year), but give no indication of those with temporary mobility limitations. Similarly, the number of Workmen's Compensation claims are known (400,000 per year, most of them minor), but the claims total does not indicate mobility limitation. The Canada Sickness Survey established that about 5% of the population suffer from a year-long illness, but again there is no indication of mobility problems.

The temporarily disabled are a large unknown, but the limited duration of their condition sets them apart from the permanently disabled. Special arrangements can be made with relatives, friends, and employers, and short-term costs are easier to bear.

Nevertheless, temporarily disabled people do have their mobility problems. For example, low-income people without access to automobiles, who are too disabled to travel by public transportation for treatment at

medical facilities, sometimes face crushing transportation expenses. Therefore, although their numbers have not been added to the total figures, later sections of this report deal with particular problems of the temporarily disabled.

SUMMARY

In the study, we consider the physically handicapped to include all those people who, because of their physical disability afflicting them on a temporary or permanent basis, have transportation problems, in Ontario urban areas where there exists public transportation.

In Ontario, there are probably a minimum of 137,000 physically handicapped people with mobility problems in municipalities with transit authorities, distributed roughly equally in proportion to the populations of individual cities. These figures become in fact the potential market for new or improved transportation services designed for the physically handicapped. The results of the travel behaviour surveys are provided in subsequent chapters, showing the expected demand for new or improved services by the total market.

TABLE II-1

METRO TORONTO (2,085,000)

NUMBER OF PHYSICALLY HANDICAPPED AS
REPORTED BY ORGANIZATIONS SERVING THE DISABLED

| Disability | Cannot Take Public Transit | Can Take Public Transportation With Difficulty | Total | Can Use Public Transportation Regularly | Total |
|--|----------------------------------|--|---------------|---|---------------|
| 1. Arthritic & rheumatic sufferers as recorded by units in Toronto hospitals | 760 | 960 | 1,720 | 1,850 | 3,570 |
| 2. Heart sufferers (recorded by 3 cardiovascular units, & 2 major hospital coronary departments total) | 1,440 | 1,920 | 3,360 | 640 | 4,000 |
| 3. CNIB | 290 | 650 | 940 | 1,960 | 2,900 |
| 4. Canadian Hearing Society Ontario Mission for the Deaf | - | 110 | 110 | 1,390 | 1,500 |
| 5. Ontario Federation for the Cerebral Palsy (Bellwoods Park House) | 1,100 | 100 | 1,200 | - | 1,200 |
| 6. Canadian Cancer Society | 1,980 | 1,520 | 3,500 | 300 | 3,800 |
| 7. Muscular Dystrophy Association | 180 | 50 | 230 | 40 | 270 |
| 8. Multiple Sclerosis Society | 1,000 | 350 | 1,350 | 350 | 1,700 |
| 9. Canadian Paraplegic Association (Lyndhurst Lodge) | 690 | 110 | 800 | - | 800 |
| 10. Tuberculosis & Respiratory Association | - | - | - | - | - |
| 11. Stroke sufferers (as recorded by Sunnybrook Hospital) | 75 | 60 | 135 | 115 | 250 |
| 12. Association for Mentally Retarded: | | | | | |
| - institutions | 2,220 | 1,560 | 3,780 | 2,220 | 6,000 |
| - residences | 185 | 130 | 315 | 185 | 500 |
| - workshops | 148 | 104 | 252 | 148 | 400 |
| - schoolchildren | 740 | 520 | 1,260 | 740 | 2,000 |
| 13. Schoolchildren with Board of Education | 585 | 517 | 1,102 | 258 | 1,360 |
| 14. Ontario Society for Crippled Children | 318 | 2,130 | 2,448 | | 2,448 |
| 15. Parkinson's Disease Association | 74 | 131 | 205 | 80 | 285 |
| 16. Spina Bifida Association | 285 | 70 | 350 | 30 | 385 |
| 17. Metro Chapter of Ontario Epilepsy Assoc. | - | 200 | - | - | 200 |
| 18. Elderly who are physically handicapped as recorded by: | | | | | |
| - Metro Homes for the Aged | 2,080 | 760 | 2,840 | 1,160 | 4,000 |
| - Senior Citizens' Apartments | 3,640 | 133 | 3,773 | 3,227 | 7,000 |
| - Nursing Homes | 2,080 | 760 | 2,840 | 1,160 | 4,000 |
| Totals: | 19,970 | 12,845 | 32,710 | 15,853 | 48,563 |

* There are no specific numbers available for those being treated at clinics treating tuberculosis and respiratory problems.

Peat, Marwick and Partners

METRO TORONTO (2,085,000)

REVISED FIGURES FOR METRO TORONTO TO
ACCOUNT FOR PARTICULAR GAPS IN ORGANIZATIONS' FIGURES

| Disability | Cannot Take Public Transportation | Can Take Public Transportation With Difficulty | Total | Can Take Public Transportation Regularly | Final Total |
|---|-----------------------------------|--|--------|--|-------------|
| 1. Arthritic and rheumatic sufferers | 1,600 | 10,000 | 11,600 | 10,000 | 21,600 |
| 2. Heart sufferers | 2,800 | 6,000 | 8,800 | 7,000 | 15,800 |
| 3. Hearing impairments | | 200 | 110 | 1,390 | 1,500 |
| 4. Visual Impairments | 800 | 1,500 | 2,300 | 2,000 | 4,300 |
| 5. Ontario Federation for Cerebral Palsy | 1,500 | 100 | 1,600 | 2,000 | 3,600 |
| 6. Canadian Cancer Society | 1,400 | 1,200 | 3,500 | 300 | 3,800 |
| 7. Muscular Dystrophy Association | 1,200 | 1,600 | 2,800 | 1,000 | 3,800 |
| 8. Multiple Sclerosis | 800 | 190 | 1,350 | 350 | 1,700 |
| 9. Canadian Paraplegic Association | 1,032 | 168 | 1,200 | | 1,200 |
| 10. TB and RD sufferers | 1,600 | 2,800 | 4,400 | 8,500 | 12,900 |
| 11. Stroke sufferers | 30 | 620 | 135 | 115 | 250 |
| 12. Association for Mentally Retarded | 3,500 | 3,000 | 5,607 | 3,293 | 8,900 |
| 13. Parkinson's Disease sufferers | 200 | 300 | 205 | 80 | 285 |
| 14. Spina Bifida Association | 330 | 80 | 355 | 30 | 385 |
| 15. Metro Chapter of the Ontario Epilepsy Association | 2,100* | 5,250 | 5,250 | 15,750 | 21,000 |
| 16. Elderly living in res. institutions | 9,430 | 3,470 | 9,453 | 5,547 | 15,000 |
| 17. Ontario Society for Crippled Children | 1,960 | 650 | 2,448 | | 2,448 |
| TOTALS: | 28,182 | 27,518 | 61,113 | 57,355 | 118,468 |

* Addition following final revision of Metro figures.

TABLE II-3

THUNDER BAY (112,000)

NUMBER OF PHYSICALLY HANDICAPPED AS
REPORTED BY ORGANIZATIONS SERVING THE DISABLED

| Organization | Cannot Take Public Transit | Take Public Transit With Difficulty | Can Take Public Transit Regularly | Total |
|---|-------------------------------------|---|--|-------|
| Arthritic Society | 28 | 6 | 23 | 57 |
| Heart disease recorded by hos- pital staff in Thunder Bay | 922 | 1,230 | 410 | 2,561 |
| CNIB | 123 | - | 20 | 143 |
| Canadian Hearing Society | 1 | - | 88 | 89 |
| Cerebral Palsy | - | - | - | - |
| Canadian Cancer Society Cancer Treatment Centre | 15 | 7 | 7 | 29 |
| M.D. Society Multiple Sclerosis | 110 | 1 | - | 111 |
| Soc. for Crippled Children Northwest Crippled Children | 33 | 2 | - | 35 |
| Schoolchildren | 87 | 1 | - | 88 |
| Senior City Old Aged Home | 198 | 114 | 100 | 412 |
| Paraplegics Assoc. recorded by hospital treatment them in TB | 134 | - | - | 134 |
| TB and RD Association | 10 | 10 | 45 | 65 |
| Strokes - Hospital | 14 | 3 | - | 17 |
| Assoc. for Mentally Retarded | 1 | 12 | 12 | 25 |
| V.O.N. | 32 | 1 | 1 | 34 |
| Lakehead Rehabilitation Centre | 16 | 104 | 680 | 800 |
| Totals: | 1,724 | 1,490 | 1,385 | 4,599 |
| Organizations Excluded from Listings because of Overlaps: | | | | |
| Rehabilitation Industries | 2 | 4 | 17 | 23 |
| Harmony Place Senior City(DVA) | 8 | 29 | 3 | 40 |

TABLE II-4

SARNIA (58,000)

NUMBER OF PHYSICALLY HANDICAPPED AS
REPORTED BY ORGANIZATIONS SERVING THE DISABLED

| Organization | Cannot Take Public Transit | Take Public Transit With Difficulty | Can Take Public Transit Regularly | Total |
|---|-------------------------------------|---|--|--------------|
| CNIB | 34 | 34 | - | 68 |
| Lambton Association for Deaf | 24 | 6 | 30 | 60 |
| Lambton County C.P. Association | 17 | 6 | - | 23 |
| Muscular Dystrophy Association | 8 | - | - | 8 |
| Multiple Sclerosis | 43 | 4 | 2 | 49 |
| Crippled Children's Treatment Centre | 28 | 18 | 64 | 110 |
| Residents of Nursing Homes and Senior Citizens' Apartments | 274 | 151 | 157 | 582 |
| Allocation for Mentally Retarded: | | | | |
| - adults | 1 | 32 | 31 | 64 |
| - children | 54 | - | - | 54 |
| - pre-schoolers | 12 | - | - | 12 |
| Students now Attending: | | | | |
| - elementary school | 22 | 11 | - | 33 |
| - secondary school | 41 | 39 | - | 80 |
| Receiving treatment identified by hosp. Physiotherapy Department | 20 | 10 | 60 | 90 |
| Stroke patients receiving therapy identified by hospital | 7 | 5 | 13 | 25 |
| Doctors specializing in TD and RD sufferers | 37 | 170 | 293 | 480 |
| Cancer Society | 45 | 35 | 5 | 85 |
| Therapy O.P. not previously previously mentioned | 15 | 15 | 80 | 110 |
| Totals: | 682 | 536 | 715 | 1,933 |

TABLE II-5

TIMMINS (35,000)

NUMBER OF PHYSICALLY HANDICAPPED AS
REPORTED BY ORGANIZATIONS SERVING THE DISABLED

| Organization | Cannot Take Public Transit | Take Public Transit With Difficulty | Can Take Public Transit Regularly | Total |
|---|-------------------------------------|---|--|--------------|
| Arthritic & rheumatic sufferers as recorded by treatment units in Timmins | 20 | 40 | 45 | 105 |
| Heart disease sufferers as re- corded by St. Mary's Hospital | 40 | 120 | 130 | 290 |
| CNIB | 10 | 15 | 20 | 45 |
| Cerebral Palsy Association | 5 | 10 | - | 15 |
| Canadian Cancer Society | 15 | 20 | 40 | 75 |
| Muscular Dystrophy Association | 10 | - | - | 10 |
| Multiple Sclerosis | 15 | 5 | 5 | 25 |
| Ontario Society for Crippled Children | 25 | 25 | 50 | 100 |
| Remainder of schoolchildren | 20 | 10 | - | 30 |
| Homes for Aged, Nursing Homes, Senior Citizens' Apartments | 35 | 70 | 25 | 130 |
| Paraplegics recorded by St. Mary's Hospital Physiotherapy Department | 35 | - | - | 35 |
| TB & RD recorded by St. Mary's Respiratory Clinic | 75 | 150 | 400 | 625 |
| Strokes as estimated by incidence level | 20 | 20 | 35 | 75 |
| Mentally Retarded | 50 | 40 | 20 | 110 |
| TOTALS: | 375 | 525 | 770 | 1,670 |

TABLE II-6

WINDSOR (257,000)

NUMBER OF PHYSICALLY HANDICAPPED AS
REPORTED BY ORGANIZATIONS SERVING THE DISABLED

| Organization | Cannot Take Public Transit | Take Public Transit With Difficulty | Can Take Public Transit Regularly | Total |
|---|-------------------------------------|---|--|--------------|
| CNIB | 5 | 100 | 195 | 300 |
| Deaf & Hearing Impairments | - | 35 | 190 | 225 |
| Cerebral Palsy | 11 | 22 | - | 33 |
| Red Cross Society | 24 | 17 | 4 | 45 |
| Multiple Sclerosis Society | 85 | 115 | 100 | 300 |
| Ontario Society for Crippled Children | 175 | 150 | 50 | 375 |
| Remainder of schoolchildren | - | - | 39 | 39 |
| Homes for Aged, Nursing Homes Senior Citizens' Apartments | 264 | 409 | 191 | 864 |
| Paraplegic victims | 10 | - | - | 10 |
| Respiratory disease sufferers recorded through cases under CSS Rehabilitation | 11 | 220 | 85 | 316 |
| Mentally Retarded | 282 | - | - | 282 |
| War Amputees Association | 120 | 60 | 20 | 200 |
| Rehabilitation for Disabled | 60 | 20 | 70 | 150 |
| V.O.N. records with | | | | |
| - Arthritic sufferers | 210 | 275 | 520 | 1,005 |
| - Heart sufferers | 811 | 635 | 1,804 | 3,250 |
| - Stroke sufferers | 827 | 1,243 | 458 | 2,528 |
| Totals: | 2,895 | 3,301 | 3,726 | 9,922 |

TABLE II-7
KINGSTON (59,000)

NUMBER OF PHYSICALLY HANDICAPPED AS
REPORTED BY ORGANIZATIONS SERVING THE DISABLED

| Organization | Cannot Take P.T. | Take P.T. with Difficulty | Can Take P.T. Regularly | Total |
|--|------------------------|---------------------------------|-------------------------------|--------------|
| Canadian Arthritic Society at Queen's | 25 | 30 | 45 | 100 |
| Heart Disease Sufferers recorded popu- lation KGH Coronary Disease Unit | 180 | 250 | 80 | 510 |
| CNIB | 10 | 75 | 25 | 110 |
| Canadian Hearing Society | 0 | 0 | 35 | 35 |
| Cerebral Palsy Association | 20 | 10 | 0 | 30 |
| Canadian Cancer Society as recorded by KGH Cancer Clinic | 45 | 50 | 5 | 100 |
| Muscular Dystrophy Association | 10 | 0 | 0 | 10 |
| Multiple Sclerosis Society | 20 | 5 | 5 | 30 |
| Society for Crippled Children | 90 | 10 | 0 | 100 |
| Remainder of Schoolchildren registered with the School Boards | 25 | 20 | 10 | 55 |
| Residents of Homes for the Aged, Nursing Homes, & Senior Citizens' Apartments | 250 | 80 | 130 | 460 |
| Canadian Paraplegic Association | 20 | 5 | 0 | 25 |
| Tuberculosis & Respiratory Association | 50 | 250 | 400 | 700 |
| CVA Strokes as estimated from incidence level | 20 | 25 | 45 | 90 |
| Association for Mentally Retarded | 115 | 100 | 135 | 350 |
| Parkinson's Foundation | 0 | 10 | 0 | 10 |
| Spina Bifida Association | 20 | 0 | 0 | 20 |
| Canadian Hemophilia Society | 0 | 0 | 10 | 10 |
| Ontario Epilepsy Association | 5 | 15 | 30 | 50 |
| TOTALS: | 905 | 935 | 955 | 2,795 |

III - EXISTING SERVICES, POLICIES AND EXPENDITURES

In this chapter we provide background information on the local, national, and international level of activities related to transportation for the disabled. Existing special transportation services and improvements to regular fixed route transportation facilities for the handicapped are described as they exist in Ontario, Canada, the U.S. and Western Europe. Following a description of existing services here and elsewhere, we outline existing policies and expenditures by the provincial government in Ontario, and describe existing policies of the federal government, other provinces in Canada, the U.S., and selected European governments. Some conclusions are drawn as to what policies appear to make sense from a comparative perspective.

EXISTING SERVICES

To document existing services in Ontario and elsewhere, a number of research steps were taken, as follows:

- in seven Ontario cities, six of which were surveyed by the study team, detailed information was obtained about each special service that existed for the physically handicapped
- a special survey was conducted in Metro Toronto of charitable organizations to determine their disabled transportation expenditures
- in 15 other Ontario municipalities, information was obtained through telephone calls to local social service agencies
- interviews were conducted by telephone in nine major cities across the country, to obtain descriptions of operational characteristics of special transit services in those cities

- letters requesting information on handicapped transportation policies and special driver licences were sent to provincial transportation agencies in Canada, and letters requesting policies and practices of provincial social departments were sent to the relevant provincial agencies
- the London and Stockholm offices of Peat, Marwick and Partners undertook investigation of policies and services in these European countries, while letters requesting similar information were sent to other western European countries
- a visit was made to Washington, D.C., to interview federal officials at the Urban Mass Transit Agency and local officials involved in subway planning
- other telephone and personal interviews and correspondence, and information exchanges with a federally-sponsored study on transportation for the disabled.

These research efforts provided a comprehensive picture of existing services, however, more extensive field investigation and discussion with local officials would be appropriate during the implementation of specific programs.

Services in Ontario

As explained above, information was assembled for a number of cities in Ontario, and was organized according to the following categories:

- voluntary organizations providing transportation services
- government-sponsored services, whether at the local, provincial or federal level
- commercial organizations, including taxi companies and special van operators

EXHIBIT III-1 (Continued)

SUMMARY CHART OF TRANSPORTATION SERVICES FOR THE DISABLED IN SELECTED ONTARIO CITIES

| City | Service Organization | Government-Sponsored Services | Commercial Organizations | Organizations with Own Vehicle |
|--------------------------|--|--|---|---|
| Thunder Bay (112,060) | <ul style="list-style-type: none"> - Senior Citizens' Homes uses City buses for outings - Cancer Treatment and CNIB Centre has accommodated wheelchair drivers for treatment - St. John's Ambulance transport people 12 person-trips monthly for recreational purposes - Volunteer Bureau transports physically handicapped approx. 10 person-trips daily. | <ul style="list-style-type: none"> - Lakehead District Board of Education and Separate School Board make about 80 person-trips daily of children to and from school - Thunder Bay Social Services transport clients daily trips - Two Senior Citizens' Homes use one large bus for outings. 84-person trips weekly. | <ul style="list-style-type: none"> - Taxis used for 22 trips daily by school board | <ul style="list-style-type: none"> - Senior Citizens' Home used van for residents; 4 person-trips daily - Crippled Children Centre has 1 van and taxi to transport children; 8 person-trips daily - Physically Handicapped Peoples Centre have 1 bus seats wheelchairs and non-wheelchairs; 14 person-trips daily. |
| Kingston (59,000) | <ul style="list-style-type: none"> - Social Planning Council and Canadian Cancer Society have occasional volunteer drivers | <ul style="list-style-type: none"> - two Old Aged Homes have 1 van each making daily trips for their residents - Kingston Taxi Cabs transports schoolchildren occasionally; 20 trips daily. | <ul style="list-style-type: none"> - Kingston Bus for the Handicapped have 1 bus and 1 van carrying p.h. children primarily under contract. 60 trips daily. | <ul style="list-style-type: none"> - Crippled Children's Centre transports children daily to Centre approx. 30 trips daily in two specially-equipped buses. |
| Sarnia (38,000) | <ul style="list-style-type: none"> - Canadian Cancer Society have volunteer driving pool making daily trips for treatment - Point Edward Optimist Club has one bus used occasionally for senior citizens - SHARE under various funding came into operation with one van to provide free service. | <ul style="list-style-type: none"> - Rehabilitation Foundation pays for trips when clients take for training purposes; about 8 person-trips daily - deaf children move in a regular schedule in government-operated vehicle to and from school | <ul style="list-style-type: none"> - White Coach Lines has one bus equipped for wheelchairs, which occasionally serves homes for the aged and other group outings. | <ul style="list-style-type: none"> - Association for Mentally Retarded has 8 vans for pre-schoolers, school-aged children and adults daily, totalling 270-300 person-trips daily - St. John's Ambulance Association uses vehicle designed for physically handicapped to transport patients to recreational facilities. |
| Timmins (35,000) | <ul style="list-style-type: none"> - voluntary groups such as Kinsmen, Rotary, Kiwanis have occasional voluntary driving for physically handicapped - CNIB and Canadian Cancer Society have occasional voluntary driving for transportation to clinics. | <ul style="list-style-type: none"> - VRS use 3 taxis for clients in field work; four trips daily - minibus service under LIP grant provides one van and 30 trips daily. | <ul style="list-style-type: none"> - Veterans' Taxi making 20 daily trips for mentally retarded under contract to workshops and schools. | <ul style="list-style-type: none"> - none identified |

EXHIBIT III-1

SUMMARY CHART OF TRANSPORTATION SERVICES FOR THE DISABLED IN SELECTED ONTARIO CITIES

| City* | Service Organization | Government-Sponsored Services | Commercial Organizations | Organizations with Own Vehicle |
|--------------------------------------|--|---|--|---|
| <p>Metro Toronto (2,100,000)</p> | <ul style="list-style-type: none"> - Senior Citizens' Service, Hospital Special Needs, Woodgreen Community Centre, Lions, Shriners, Rotary, CNIB volunteers, Cancer Society Volunteers - three vans, six buses and volunteers' cars making 400-600 trips per day of elderly, adult physically handicapped, and children. | <ul style="list-style-type: none"> - Metro Social Services and Housing with 7 vans one in each Old Aged Home - TTC presently tendering to private operator to provide about 100 work trips per day - Toronto, borough, and separate school boards contract out about 6,000 p.h. and retarded school-children trips per day | <ul style="list-style-type: none"> - Wheelchair Mobile Services and Ambubus are two growing commercial van companies with about 8-9 vehicles; have small school board contracts and make about 350-400 trips per day - Metro Taxi Services has bulk of handicapped school rides, and uses station wagons and taxis for 6,000 trips daily | <ul style="list-style-type: none"> - Bloorview Children's Hospital, Corbrook Sheltered Workshop, Society for Crippled Children, Baycrest Day Centre, and War Amputees - nine vans, five buses, one station wagon, making 275-300 trips per day of children, elderly, sheltered workshop employees and war and civilian amputees |
| <p>Ottawa-Carleton (500,000)</p> | <ul style="list-style-type: none"> - TOAD service originally sponsored by LIP grant providing free car rides for about 100 trips per day. | <ul style="list-style-type: none"> - Regional Municipality of Ottawa-Carleton and OC Transpo has assumed responsibility for TOAD service until a replacement service is established, and a pilot project special service is currently being planned for early 1975 - OC Transpo is also making minor modifications to regular buses to make them more accessible. | <ul style="list-style-type: none"> - M & O Buslines operates commercial van service with about 2-3 special vans. | <ul style="list-style-type: none"> - six organizations own their own vehicles which include: 13 vans, 13 minibuses, 2 ambulances and 13 school buses. Two minibuses, two school buses and one ambulance are specially equipped to handle wheelchairs. |
| <p>Windsor (250,000)</p> | <ul style="list-style-type: none"> - CNIB, Red Cross, St. Vincent de Paul transport clients to medical appointments and other trip purposes making about 10-15 trips daily. | <ul style="list-style-type: none"> - Board of Education transports 170 children making 340 trips daily in cabs and buses - Huron Lodge Old Age Home has one bus, which is used for residents and community at large. | <ul style="list-style-type: none"> - Checker Cab Ltd. has 5 wheelchair cars accommodating one wheelchair, 30 trips for physically handicapped daily. | <ul style="list-style-type: none"> - Churchwood Pre-School and Residence have five vehicles transporting mentally retarded children and adults - CNIB has one station wagon used only for emergencies - ARC Industries transports clients daily in two Econoline vans. |

* Populations are based on 1971 figures for geographic area covered by our surveys, rather than official city population figures.

- commercial organizations, including taxi companies and special van operators
- community organizations with vehicles serving their own clients, e.g. hospitals, sheltered workshops, and other institutions.

Also recorded where appropriate were organizations, institutions, and government agencies which paid for regular taxi services for specified trips made by eligible physically handicapped. The purpose of these trips is generally to bring physically handicapped people to rehabilitation, recreation, medical and other programs, and they tend to supplement other transportation services provided by various organizations.

A summary of the seven cities researched in detail is presented in Exhibit III-1. The detailed results of the survey of existing services in these cities and brief notes on other Ontario cities are presented in Tables III-1 to III-6 at the end of this chapter. A synopsis of the Ontario situation is provided below.

Voluntary Organizations

Many of the transportation services provided to the handicapped are through charitable organizations. However, there are few completely voluntary organizations, like the Rotary Club, the Kinsmen and Shriners. These groups typically provided once a week or month transportation for the disabled for recreation or other special purposes. Historically, transportation services seem to be provided for people with specific handicaps by organizations serving that specific disability.

Recently, more comprehensive city-wide services have emerged, such as SHARE in Sarnia and various services started by LIP grants. These services have tended to be more universal, in terms of transporting physically handicapped for a variety of trip purposes. These services are still basically shoestring operations which depend on voluntary or very low cost labour. Their financial viability is dependent on temporary federal programs or private donations. In some cases, the vehicles are obtained initially from private donations, but sustaining the service requires a continued injection of funding; such operating funds are difficult to generate from local community resources.

Government-
Sponsored Services

The most significant government-sponsored service in each city surveyed was the transportation of physically disabled, emotionally disturbed, or mentally retarded schoolchildren by the Boards of Education, who receive subsidies for transportation from the Ministry of Education. The Boards typically contract out these special transportation services to taxi companies or other commercial operators. In the larger cities, some of these contracts appear to go to commercial operators whose main business is transportation of the physically handicapped.

The other main government service is the special vans at most homes for the aged. These vans provide services basically to the residents of the homes for the aged, and sometimes to the disabled community at large.

Transit agencies are not providing special transportation services for the physically handicapped. The exceptions to this generalization are Metro Toronto and the Regional Municipality of Ottawa-Carleton. In these two cities, the local transit operators are about to embark on special transportation services for at least a limited proportion of the physically handicapped population.¹

Commercial Services

Commercial services that provide transportation to physically handicapped people are basically taxi companies in the smaller cities and in addition, special van companies in the larger cities. Few companies have vehicles that can accommodate wheelchairs, although some taxi companies have such equipment (e.g. Kingston, Metro Toronto and Sarnia). Only in Toronto are there special van companies whose main business is to provide a commercial service for the severely disabled. Commercial service companies in Metro Toronto with special vans also depend on regular contract operations with school Boards.

Organizations With own Vehicle

A number of organizations whose main constituency group is the physically handicapped, such as sheltered workshops and children's institutions or hospitals, have acquired and operate their own vehicles.

-
1. At this time the Toronto Transit Commission is in the process of tendering a contract to a private operator, to provide work-trip service for disabled people. OC Transpo in Ottawa-Carleton is making minor modifications to the existing buses to make them more accessible to the physically handicapped, and also will design a special pilot project service for those who cannot use public transportation.

Special Transportation
Services - Canada

Research was conducted on the existing special transportation services for the physically handicapped in the rest of Canada. A summary of Western Canada is shown in Exhibit III-2.

Emphasis was placed on Western Canada, since it appears that in this part of the country special services have evolved somewhat more than in the rest of Canada. Community-supported charitable organizations are subsidized by school Boards or provincial education agencies to transport schoolchildren who are disabled. From this base some of these charitable organizations now provide limited services to disabled adults for other trip purposes. This is in contrast to Ontario where transportation of disabled schoolchildren has evolved from charitable organizations to the use of private contractors to supply this service. Therefore, while disabled schoolchildren's transportation is possibly more advanced in Ontario, there has not been the same spillover to the limited adult transportation services provided by charitable organizations in the West.

The City of Winnipeg is an interesting comparison to the rest of the West, since it has three commercial operators to supply special van services. It appears to be somewhat like Toronto in this respect.

From the evidence obtained in Quebec and the Maritimes, the situation appears to be similar to that of Ontario. Some services are provided by charitable organizations, but not to the same degree as in

EXHIBIT III-2

SUMMARY OF EXISTING SPECIAL SERVICES IN WESTERN CANADA

| | |
|---------------------------------|--|
| <p><u>British Columbia:</u></p> | <p>B.C. Lions Society (Easter Seals) provides 95% of the transportation services for p.h. in the province, funded by passenger revenue (at \$2.00 per trip for those who can afford it), provincial and LIP subsidy and school contracts:</p> <ul style="list-style-type: none">- <u>Vancouver:</u> with budget of \$350,000, provide 1,400 person-trips per day for p.h. schoolchildren by bus; an 8-special van fleet carries others for \$2.00 to \$10.00 per trip- <u>Victoria:</u> with budget of \$90,000, provide 360 person-trips per day, in 8 special vans and 4 buses. |
| <p><u>Alberta:</u></p> | <p>Handibus Association provides most of the special transportation services in Calgary and Edmonton, primarily schoolchildren, funded by United Appeal, City agencies, and Boards of Education:</p> <ul style="list-style-type: none">- <u>Calgary:</u> 13 vehicles in operation on a 1-day pre-booking basis, \$1.00/mile regular fare and 20 tickets for \$10.00 per month for low-income people- <u>Edmonton:</u> 16 school buses with 4 to 5 wheelchair spaces on a \$2.25 return fare; operates with a net deficit of \$190,000 per year. Clientele is 350 schoolchildren, 50 adults per day. |
| <p><u>Saskatchewan:</u></p> | <p>Saskatchewan Council for Crippled Children and Adults operates special van services in Saskatoon, Swift Current, and Regina, primarily for schoolchildren. Charge 50¢ per trip for others. Costs underwritten by Easter Seals, while LIP grant enabled service to expand to evening hours.</p> |
| <p><u>Manitoba:</u></p> | <p>In Winnipeg, there are three commercial special van operators, with 16 vans in all. The Wheels for the Disabled Project is the largest one of the three, and charges \$1.50 loading charge and 45¢/mile.</p> |

EXHIBIT III-3

SUMMARY OF SELECTED EXISTING SPECIAL SERVICES IN U.S.A. CITIES

| | |
|-------------------------------------|--|
| <u>Milwaukee, Wisconsin:</u> | Handicabs commercial service of 120 small buses and vans with wheelchair access, primarily for schoolchildren (1,500 trips daily) with 10 vans devoted to adult demand-responsive service at commercial fares. Developed over the last 15 years by a handicapped entrepreneur, and include driver and bus mechanic training programs. |
| <u>Cranston, R.I.:</u> | Dial-a-Ride demonstration project sponsored by UMTA with three vehicles (30 and 19 passenger buses equipped for wheelchair access) for physically handicapped and elderly. |
| <u>St. Petersburg, Florida:</u> | Tri-level (including UMTA) sponsored door-to-door minibus demonstration for the elderly (TOTE) with 13 special vehicles (Dodge Maxivans), two of which can accommodate wheelchairs, operating on a pre-booking arrangement or penalty fare for short-notice calls. |
| <u>Cleveland, Ohio:</u> | Demonstration project in restricted geographic area sponsored by UMTA. |
| <u>Chicago, Ill.:</u> | The YMCA is operating a limited demand-responsive system for the elderly and physically handicapped community. |
| <u>Marin County:</u> | A voluntary System, Whistle-Stops-Wheels, operates 10 to 12 vehicles for 5,000-6,000 eligible p.h. and elderly users. |
| <u>Columbia, Missouri:</u> | The OATS system is a city-wide demand-responsive transportation demonstration for the elderly. Funds are allocated through the state's administration on Planning and Services for the Elderly. |
| <u>Valley Transit, Connecticut:</u> | This demonstration project funded by UMTA combines fixed route services, and demand-responsive service for elderly and handicapped. The system includes "fare tran" which is a computerized method of taking in fare, and through which social agencies are billed monthly. The rider is charged according to the number of minutes he/she travels, the time of day for travelling and the number of people travelling in the vehicle. |
| <u>Palm Beach, Florida:</u> | A federally-funded demonstration project with a system of minibuses for the aged and the handicapped, operating on a demand-responsive basis. The specially built small vehicles transport 12 to 14 persons and have hydraulic lifts for wheelchairs and handholds. |

EXHIBIT III-3 (Continued)

SUMMARY OF SELECTED EXISTING SPECIAL SERVICES IN U.S.A. CITIES

| | |
|---|--|
| <p><u>Baton Rouge, Louisiana:</u></p> | <p>UMTA is funding a demonstration project designed to test a combination fixed route/demand-responsive transportation system to take physically handicapped to health and social services, employment, and recreational facilities.</p> |
| <p><u>Slamath Falls, Oregon:</u></p> | <p>A demonstration grant has been given to this centre to develop a model for the use of school buses during idle hours for public transportation. It will serve primarily senior citizens' housing complexes.</p> |
| <p><u>West Virginia:</u></p> | <p>Appalachian Regional Commission, DOT, HEW, DEO joint four-year experiment in which low-income elderly or disabled can purchase low cost "stamps" for transportation by private or common carriers of their choice. A fleet of minibuses is being bought for use by community groups for this purpose.</p> |

the Western Provinces. On the whole, the Ontario experience is roughly similar to the rest of Canada except that the charitable organizations of Western Canada have developed more as operators of special services than in Ontario.

Existing Special
Services - United States

There appear to be few City- or State-sponsored special transportation services in the United States; the initiative has come primarily from Washington. The federal government has sponsored demonstration projects in several cities, either through the Urban Mass Transit Agency or the Administration on Aging in the Department of Health, Education, and Welfare. Exhibit III-3 contains summary information on special services that has been obtained for selected U.S. cities.

Unfortunately, very little published information exists on special transportation services for the disabled in the United States. Besides the demonstration projects, there appears to be little government involvement. There are presumably commercial services in the larger cities, and the most illustrative of these has developed in Milwaukee. In that city, a successful entrepreneur has built up a large fleet of various types of special vans and buses, based on school Board contracts.

The various U.S. special service demonstration projects should provide further information on operating characteristics, although full evaluations and descriptions of the demonstrations are not yet available.

In any case, apart from the services provided by these demonstration projects, the U.S. does not appear to be more advanced than Ontario.

Existing Special
Services - Western Europe

Some general information was obtained from specific western European countries. The information received indicates the following:

- the Dutch national and municipal authorities do subsidize special transportation services, although the extent to which they do is not certain
- the Danish Ministry of Labour and Social Affairs provides special transportation services for those people receiving the rough equivalent of the Ontario disability pension
- the Belgian national and provincial governments do not provide specific transportation services but insurance "Mutuelles", organizations roughly equivalent to the Workmen's Compensation Board, reimburse part of the cost of transportation to their handicapped members when required. In addition, charitable organizations and neighbourhood ("communes") social centres (Services d'EnteCADE Sociale) provide some financial assistance for transportation
- in Britain, local authorities have statutory powers under the Department of Welfare to assist the handicapped, including providing special vehicles to transport them to and from workshops, day centres, and other designated destinations. The extent to which both facilities and transport are made available varies among municipalities. In London (and presumably elsewhere) ambulances are used in non-emergency situations to transport the disabled for medical purposes only, under the Department of Health jurisdiction.

More documentation is available about Sweden. The Swedes appear to have developed an extensive network of special transportation services for the handicapped in most municipalities.

The National Association of the Physically Handicapped (DHR) undertook a survey in 1973 of special transportation services provided by local governments. The results of the survey, on Exhibit III-4 shows that most municipalities do provide special transportation services, although in most cases on a limited basis.

The limitations in the services provided by the municipalities vary considerably by municipality. In Stockholm, for example, it is possible for a disabled person to order a taxi, or a special van if necessary, for private return trips within a 30-kilometre radius up to three times per month. For the seriously disabled, there is no limit to the number of trips. The cost to the individual is \$1.50 per return trip. For daily travel to and from work the price for taxi or special van service is about \$12.00 per month, the same as the regular fare per month for unlimited transit usage.

Thus, there are a number of ways in which special transportation services have been provided in Western Europe. It would appear there is more government sponsorship of these services and that the special services are more established than in North America. A final general observation is that even where the structure is quite extensive, as in Sweden, the service is usually limited by a maximum number of trips per month, time of day, or by a requirement for pre-booking the service.

EXHIBIT III-4

SWEDISH SURVEY OF SPECIAL SERVICES PROVIDED BY MUNICIPALITIES

| | Municipalities Over 50,000 Residents | Municipalities with 10-50,000 Residents | Municipalities with Under 10,000 Residents |
|---|--|---|--|
| Total number of Municipalities | 30 | 148 | 285 |
| Total number of responses to questionnaires | 29 | 140 | 245 |
| <u>Responses:</u> | | | |
| No special services provided | 0 | 14 | 103 |
| Services provided but limited by maximum number of trips permitted, by time of day, or by pre- booking required | 26 | 86 | 107 |
| Unlimited services provided | 3 | 34 | 29 |

EXISTING POLICIES
AND EXPENDITURES

Above, we have reviewed the existing special transportation services in Ontario, the rest of Canada, the United States, and Western Europe. Other transportation assistance involves transfer payments to the disabled, access to private automobiles adapted for the handicapped, and improvements to the existing transit systems in cities. Ontario policies and expenditures in these areas are reviewed in comparison with policies of other governments.

Ontario Policies
and Expenditures

In reviewing Ontario policies, we have begun with the Ministry of Transportation and Communications. At present, with two minor exceptions there is no specific program in this Ministry to improve transportation services for the physically handicapped.²

The first exception stems from the regulatory responsibilities of the Ministry. It verifies the driving ability of handicapped drivers and issues special licences for people who have to drive vehicles adapted for use by physically handicapped drivers. There are presently about 700 disabled people with special driving licences in Ontario.

The other exception is the subsidization of the fares of the blind and war amputees on the Toronto Transit Commission transit system. This policy also applies to other cities where similar fares are in force.

2. The recent MTC decision to support the TTC's experimental pilot project referred to earlier is a recent departure from MTC practice and relates to a possible change in policy.

The MTC does not consider special vehicles as part of the capital and operating subsidy arrangements with municipalities for transit improvements. The two municipalities - Ottawa-Carleton and Metro Toronto - which are initiating pilot projects in special transportation have sought MTC financial contributions for these projects. Questionnaires sent to the other municipalities in Ontario which have transit services reveal that without provincial support, they could not conceive of providing special services for the physically handicapped or improving their existing transit services to make them more accessible.

While the MTC has no transportation program support for the physically handicapped, the province as a whole does. Approximately \$12 million per year is now spent on transportation in various provincial social programs, as shown on Exhibits III-5 and III-5a. It should be noted that only about half this amount is for transportation services, and half is a direct transfer payment to people on Disability Pension. To summarize, the following are the most important of these programs:

1. As a result of the basic provincial requirements to subsidize school Boards for providing transportation to schoolchildren, about \$3.6 million of the school transportation budget is spent on grants to support the transportation of physically handicapped and mentally handicapped schoolchildren. The transportation services are provided under contract to commercial and sometimes charitable institution operators.
2. A further \$5.6 million is spent in supplemental transportation payments to about 30,000 physically handicapped adults in the province who receive disability pensions from the Ministry of Community and Social Services. These payments are not restricted to transportation, and a recipient can use the funds for any purpose.

PROVINCIAL EXPENDITURES FOR
TRANSPORTATION OF THE DISABLED (1973-74)
(\$000's)

| <u>MINISTRY OF COMMUNITY AND SOCIAL SERVICES:</u> | Provincial Expenditures |
|---|----------------------------|
| <u>Family Benefits Branch:</u> | |
| - transportation supplements to Disability Pensions ¹ | \$5,605 |
| <u>Homes for Aged Branch:</u> | |
| - acquisition and operation of vehicles by homes ² : | |
| - municipal homes | 227 |
| - charitable homes | 22 |
| - Children's Institutions, Charitable ₃ Institutions, and Homes for Retarded Persons Acts : | |
| - transportation costs for institutions | 377 |
| <u>Rehabilitation Branch</u> ⁴ : | |
| - reimbursements to clients for transportation expenses | 156 |
| <u>Municipal Welfare Branch:</u> | |
| - reimbursements to clients for transportation expenses ⁵ | 178 |
| TOTAL ⁶ : | \$6,565 |

Notes:

1. \$30 per month transportation allowances are paid to about 3,200 people (wheelchair or blind), and \$15 transportation allowances to about 24,700 people who qualify for disability pension which now totals up to \$200/month. 50% of the funds are paid by the Fed. Govt. through the Canada Assistance Program.
2. Province pays 50% of capital costs and 70% of operating costs for operation of vehicles at municipal homes, with the remainder paid by municipalities, and about 38% of capital costs of charitable homes' vehicles with the remainder paid by residents or local fund-raising efforts. 50% of the provincial contribution is paid by Fed. Govt. through the Canada Assistance Plan.
3. Under these Acts the province pays 80% of transportation costs, which average approx. 1.5% of total operating costs, and the municipalities pay 20%.
4. Estimated expenditures by Rehabilitation Branch for payments to clients is about 2% of their total budget.
5. Special assistance for transportation to municipalities is provided by the province. This amount includes payments to disabled on welfare, possibly 50% of the total amount of the special assistance. The prov. share is funded in total by the Fed. Govt. through the Canada Assistance Plan.
6. The total excludes transportation costs paid by the Day Nurseries Branch and Child Welfare Branch for transportation to day nurseries and children's aid societies, estimated at \$1.7 million. Most children using these services are not physically or mentally handicapped, although they are perhaps social disadvantaged.

EXHIBIT III-5b

PROVINCIAL EXPENDITURES FOR
TRANSPORTATION OF THE DISABLED (1973-74)
 (\$000's)

| | <u>Provincial Expenditures</u> |
|--|----------------------------------|
| <u>MINISTRY OF EDUCATION:</u> | |
| <u>School Business Finance Branch</u> ¹ : | |
| - permanently and temporarily disabled and mentally handicapped schoolchildren | 3,276 (through School Boards) |
| - Schools for the Blind and Deaf | 210 |
| <u>Provincial Schools Branch</u> ² : | |
| - Crippled childrens' Centres, hospital Schools, etc . having Section 12 Schools attached (General Legislation Grants Regulation 1973) | <u>112</u> 3,598 |
| <u>MINISTRY OF TRANSPORTATION AND COMMUNICATIONS:</u> ³ | |
| - subsidy of fares for blind and disabled veterans on the TTC | 112 |
| <u>WORKMEN'S COMPENSATION BOARD</u> ⁴ | 878 |
| Total: | \$4,588 |

Notes:

1. Entitlements to School Boards for home-school transportation on a daily basis throughout the year, and periods of less than a year for temporarily disabled.
2. Payment of Transportation Services expenses by the Ministry of Education to the Section 12 Board.
3. MTC subsidizes the Toronto Transit Commission in this way.
4. WCB reimburses funds directly to claimants or employers for specific public transit, taxis, and ambulance costs. The WCB's revenues are derived originally from those participating in the WCB program; thus, transportation expenditures are not supported by tax revenues, and should not be considered as part of the overall burden on taxpayers.

3. The Homes for the Aged program allocates almost \$250,000 to individual homes throughout the province for buying and operating special vans or buses to transport the residents of the homes. The Homes for the Aged Branch in the Ministry of Community and Social Services is now promoting the broader community use of these vehicles to transport other than the residents of the homes.
4. As part of its support to children's mental and other institutions, the Ministry of Community and Social Services provides funds for transportation to and from these institutions. About \$350,000 to \$400,000 is spent in this way, with most passengers being physically or mentally disabled.
5. The Vocational Rehabilitation Branch of the Community and Social Services Ministry spends up to \$200,000 a year for assisting disabled people to travel by taxi, van, private automobile, and for inter-city purposes, as part of their rehabilitation program. Such subsidized trips can include work trips when the jobs are low-paying. Eligibility is determined through an economic needs test.
6. The Municipal Welfare Administration Branch of Community and Social Services, under the General Welfare Act, reimburses municipal bodies, as part of the Special Assistance Budget, for services that include transportation of the physically handicapped. Branch officials estimated approximately \$150,000 being spent per year for disabled transportation in this way.

The Workmen's Compensation Board expends almost \$1 million on transportation of their clients eligible for such assistance. However, their funds are generated by their own revenues and they are not tax-supported.

Unlike the Ministries of Community and Social Services and Education, the Ministry of Health has no extensive commitment to the payment of transportation costs for programs within their jurisdiction.

The Ministry is currently investigating whether it should subsidize transportation costs of patients attending certain outpatient treatment and care programs (crippled children's treatment centres, adult rehabilitation centres, and designated regional rehabilitation centres in the province).³

Currently, the Ministry does pay half the transportation costs of the Niagara Rehabilitation Centre, but not other Centres. Some parts of the budgets for licensed children's mental health centres have supported the transportation costs of some patients. Part of the transportation costs for crippled children's treatment centres is paid for through the Ministry of Education. It has come to the Ministry of Health's attention that voluntary fund-raising campaigns would prefer to direct their efforts to services other than transportation. For these reasons, there is some pressure on the Ministry to increase its coverage of transportation expenses to its disabled clientele.

In order to provide some perspective to the provincial expenditures for transportation, all charitable organizations in Metro Toronto were asked about their transportation expenditures. The results are presented in Table III-7. A total of \$225,000 is spent by the charitable organizations surveyed. Since Metro Toronto probably represents nearly half of Ontario in terms of transportation expenditures by

3. See "Position Paper on Support by Government on Transportation Costs for Outpatient Treatment" a draft report prepared by a project team, chaired by Mrs. Stella Tate, Allied Health Disciplines Branch. The recommendation suggested was 100% subsidization of transportation expenditures over and above that which the disabled individual or his family can contribute, to be administered locally by the operating health facilities in the province.

charitable organizations, the total amount for the province is relatively modest compared to the existing annual provincial expenditures of about \$6 million for transportation services.

Federal and Other
Provincial Policies

The federal government, like the provincial government in Ontario, has no identifiable policy with respect to transportation of the physically handicapped. However, it has various areas of involvement.

The Ministry of Transport has played no direct role in this area, although there is a developing interest in urban transit generally. In addition, the Transportation Development Agency has promoted the development of an improved battery-operated wheelchair for greater personal mobility. It has also commissioned a film on the problems of the disabled in travelling, primarily designed for educational purposes for those in various operations of the transportation business. Production is planned to begin in late summer of 1974.

The main federal initiative thus far has been the effect of dozens of communities using LIP grants (see Exhibit III-6) to extend or initiate special transportation services for the disabled. The extensive use of LIP money for this purpose was documented above in a discussion of the existing special services in Ontario and in the rest of the country. It should be emphasized here that the Local Initiatives Program is of a temporary nature and, thus, funding of local programs will cease.

EXHIBIT III-6

1973-74 LIP PROJECTS PROVIDING TRANSPORTATION
SERVICE TO ELDERLY AND HANDICAPPED IN ONTARIO

| PROJECT TITLE | LOCATION |
|--|---------------|
| TASC Transportation Assistance for Senior Citizens | Thunder Bay |
| Operation Well Being for Senior Citizens | Iroquois |
| Maitre Chez-Nous | Ottawa |
| Cantebury Community Outreach Program | Ottawa |
| Bridging The Gap | Buckingham |
| Handi-Transit | Oshawa |
| A Helping Hand-Oshawa | Oshawa |
| A Helping Hand-Whitby | Whitby |
| Services for the Handicapped | Sudbury |
| Helping Hands | North Bay |
| Volunteer Bureau | Peterborough |
| Senior Citizens' Winter Aid | Peterborough |
| Lenox & Addington Resource Centre | Napanee |
| Kingston Senior Citizens' Centre | Kingston |
| Helping Hands | Spencerville |
| Senior Citizens' Service Centre | Manotick |
| Peel Handi-Care | Mississauga |
| Ward I Services for Seniors | Toronto |
| COPE | Toronto |
| West Metro Senior Citizens | Toronto |
| Community Services | North Buxton |
| Windsor Home Service | Windsor |
| Case Aide | Windsor |
| York Services for Seniors | Toronto |
| Living, Incentive Fulfillment & Training | Fort Erie |
| Aide for Senior Citizens | Niagara Falls |
| Outreach | Fort Erie |
| Big Brothers Contact | Niagara Falls |

Often, this will occur at a point where a demand for services has been stimulated following the provision of the temporary service. One can anticipate more insistence on some kind of support for continued transportation services once the federal LIP program is withdrawn. In fact, this has been very much the case in the Ottawa-Carleton area, where the TOAD project, initiated by LIP funding will be continued in some manner by the local government.

LIP grants have not only been directed toward provision of transportation services. They have also contributed to surveys of existing services and needs for services, which in themselves have acted as a stimulation to the demand for such services.

The federal government has also been involved in two other ways which can be identified. The Department of Veterans Affairs makes some payments for medical trip purposes, and subsidizes some special vehicles for veterans. The Ministry of Urban Affairs appears to have at least a research interest in the problem, and has undertaken a general survey of the problem in a dozen cities in Canada.

Other Provinces

The results of the letters of enquiry sent to provincial agencies for transportation and for social services reveal that their policies are not too dissimilar from those of Ontario. Provincial Ministries of Transportation have no direct role other than issuing licences for specially adapted private automobiles. The Social Service agencies

provide assistance to individuals and institutions to assist in improving transportation services. In no province could we find commitments to improve existing transportation services for the disabled.

American Policies

The Urban Mass Transit Administration in its enabling legislation stipulated that subsidies to local transit agencies could be withheld if the transportation facilities envisaged were not to be made accessible to the physically handicapped. However, there has yet to emerge a policy which goes beyond that principle.

The BART subway system for San Francisco was designed to be accessible to the physically handicapped. This was done as a result of state legislation following political lobbying from handicapped organizations and individuals in the Bay area. The Washington Metropolitan Transportation Authority is constructing its new subway system to be accessible to the physically handicapped. Here again, however, the primary cause for making the subway accessible was local pressure and not policy put forward by the UMTA.

UMTA has attempted to stimulate innovation in the design of buses through the Transbus design competition, which would include making buses more accessible to physically handicapped people. However, the thrust of this program is to make a better bus, rather than to design one specially for the disabled market. The Trans-bus competition, in any event,

appears to be a few years away from influencing the production line models of transit equipment manufacturers.

British and
Swedish Policies

The special services arrangements in Great Britain and Sweden have been described above. These two countries have in addition other policies that relate to transportation of the disabled, particularly the provision of automobiles with specially equipped driver controls, and to some extent regular transit system modifications.

In Britain, the current policy is still for the provision of the three-wheeled trike despite the strong feelings and criticisms against the vehicle. The trike is basically a small one-passenger automobile with controls designed for the handicapped person. Its chief disadvantages are in its poor safety record and one-passenger limitation.⁴

There about 20,000 British drivers with invalid trikes on the road, issued by the Department of Health and Social Security. People who are severely disabled (i.e. virtually cannot walk), and people who used to drive to work but cannot use public transit are eligible. Conversion grants are awarded to people eligible for a trike but who have opted to buy their own car with modified controls.

4. The issue at present is whether or not to replace the trike with converted minis, much preferred by the vast majority of disabled users. The unit cost is comparable and mini replacement parts are more easily obtainable.

The Swedes also have a private automobile program. Handicapped people who need them can receive financial and other assistance to purchase and use cars. Such assistance includes training, purchasing, conversion and tax allowances, varying according to economic need.

With respect to regular public transportation, neither the British nor the Swedes have made their vehicles and stations satisfactorily accessible to the handicapped. In Sweden, this fact is the reason used to support a special transit service. In Stockholm, there are two reserved seats for disabled persons in every bus and subway car, but overall accessibility has decreased with the withdrawal of ticket collectors, who formerly assisted disabled passengers. Not all subway stations are equipped to accommodate wheelchairs.

Both the British and Swedes are researching ways to improve regular transit vehicles, but as discussed, the existing systems generally have poor accessibility. Both have developed fairly comprehensive special vehicle and private automobile programs with rather elaborate eligibility procedures. In both cases, too, the special services and private automobile programs are administered by the central or local governments as extensions of social policies in line with the overall health and social assistance policies of these two countries.

CONCLUSIONS FROM
EXISTING SERVICES AND POLICIES

A review of the development of policy and transportation services for the disabled in Ontario and elsewhere provides some insight into possible directions for Ontario. The main conclusions that would seem to be appropriate based on experience thus far in disabled transportation are the following:

1. There is virtually no North American precedent for publicly-supported special transit services for the disabled. The Swedish system possibly offers the best example of a more advanced state of public commitment to disabled transportation services, with its comprehensive set of special services and procedures administered at the local government level.
2. The main exception to lack of public support is the rather extended transportation services for disabled children on school trips. This is one area where most of North America has developed special services for the disabled.
3. Ontario appears to be in a position similar to many progressive North American governments; through various social service programs it is already in the disabled transportation business, but in a fragmented way and as a result of fulfilling social objectives rather than improving public transportation for the disabled.
4. The more advanced state of the British and Swedish transportation programs for the disabled reflects a more advanced state generally of those two countries' social and transit services. Ontario should examine disabled transportation policies within the perspective of the existing social services and urban transit policies in the province. In this regard, for example, development of programs could involve considerable local planning and substantial provincial cost sharing.

5. The U.S. has undertaken several demonstration projects. The emerging Ottawa and Toronto pilot projects are in the same category. However, these Ontario projects probably will be difficult to turn off, and are really the beginning of long-term arrangements rather than being strictly experimental.
6. Communities in Ontario and elsewhere have dealt with the problem of transportation services for the disabled in a variety of institutional forms. Usually charitable organizations have been involved with a variety of public support (e.g. the Western Canadian practice of using charitable organizations to handle handicapped schoolchildren transportation). This might suggest that future programs in Ontario should be geared to a municipality's institutional resources and local needs, possibly making use of charitable organizations in smaller communities and commercial operators in larger ones.
7. A pattern of decisions in the U.S. concerning new subway construction would appear to have importance in predicting various political pressures that might be brought to bear on future expansion of fixed rapid transit in Ontario, particularly Metro Toronto. In both San Francisco and Washington, there has been considerable controversy and interest-group pressure to provide vertical access to the new subway systems, resulting in the decision to construct elevator access to subway platforms at substantial cost and beyond the original plans of local and national transit officials.

TABLE III-1

METRO TORONTO

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|-------------------------------|--------------------------|--------------------------------------|---------------------------------------|---|---|---------------------|--|-----------------|
| SERVICE ORGANIZATIONS: | | | | | | | | |
| Senior Citizens' Services | 2 buses | 12 persons, 2-3 wheelchairs | Elderly | Free - sponsored by fed. govt. | Phone in as soon as plans can be made | 70 | | Federal grant |
| Fed Cross | 3 vans, volunteers' cars | | Mainly children and elderly | Free - sponsored by Red Cross | At least 1 day in advance | 40 | | |
| Woodgreen Community Centre | 1 bus | 50 per vehicle | Elderly | Free - sponsored by Centre | Days for pickup to/from Centre are assigned | 70 | | |
| Hospital Special Needs | 1 bus | 14 wheelchairs 12 persons | All Metro institutions club groups | free/billing of \$3 not mandatory; bus donated by Rotary Club | Few days to a week prior to outing | 20 | | |
| Ramses Shrine Temple | 1 bus | 10 wheelchairs 30 regular passengers | Children's schools and hospitals | Free to user/sponsored by Club | 1 week prior to need - used 1 a week | 20 | | |
| Lakeshore Lions | 1 Bus | | Any request | Free | Used 1-2 times yearly | - | | |
| Rotary Club (Toronto Chapter) | Volunteer Cars (40) | | Torch Club recr. club meeting monthly | Free - sponsored by Club | 2 weeks advance notice | 20 | | |

TABLE III-1

METRO TORONTO

- 2 -

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|---------------------------------------|--------------------------------|---|--|---|--|---------------------|--|-----------------------|
| CNIB Voluntary Assoc. | Volunteer Cars (40) | | Clients of CNIB | Free - sponsored by instit. | 1 day's notice | 10 | | |
| Cancer Society | Volunteer Cars (30) | 1-2 persons | | Free - voluntary service | Day's notice | | | |
| <u>GOVERNMENT OPERATORS:</u> | | | | | | | | |
| Toronto Dept. of Parks and Recreation | Hire 3-4 buses weekly | 25 regular passengers per vehicle | Elderly | Free | 1 week prior to outing | 30 | | Government of Ontario |
| Metro Social Services | 7 vans, 1 bus | 4-5 wheelchairs 7 vans 8 wheelchairs 1 bus | Elderly | Free | Day-to-day needs (primarily medical) | 390 | | |
| Metro Emergency Services | Ambulance fleet of 50 vehicles | 1 prone patient | Hospital transfer home from hospital trips | \$5 if ambulance called by doctor or head nurse | On demand | 120 | | |
| <u>COMMERCIAL SERVICES:</u> | | | | | | | | |
| AMBUBUS | 4 Maxivans 1 large bus | Maxivan: five wheelchairs; Bus: 10 wheelchairs | Phys. Hand. & Elderly | \$5 for school, medical, or work, 1 way \$6 for rec. on the same | Book 1 day in advance or if there is room can be taken on the same | 150 | | |

TABLE III-1

METRO TORONTO

- 3 -

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|--------------------------------|--|------------------------------------|---|---------------------------------|---|---------------------|--|-----------------|
| Wheelchair Mobile Services | 5 vans | 5-6 wheelchairs/van | Phys. handicapped and elderly. Non-p.h. travel with friends as well | \$6-\$8 1-way | Book 1 day in advance; will provide step service - some contract service | 260 | | |
| Metro Taxi Service | 300 regular taxis 90 station wagons; no special vehicles | As in regular passenger cars | Physically handicapped children | Contracts paid by School Boards | Regular service school days according to contract specifications | 5,380 | | |
| ORGANIZATION WITH OWN VEHICLE | | | | | | | | |
| War Amputee | 1 Maxi van | 3 wheelchairs 3 persons and driver | Any amputee or disabled veteran | Free to user | Call a day in advance for group outings. Permission thru Board of Directors | 18 | | |
| Bloorview Children's Hospitals | 3 vans | 4-6 wheelchairs | Children living or attending Bloorview | Free | Service day-to-day needs | 50 | | |
| Corbrook Sheltered Workshop | 1 bus, 1 van | 12 passengers 5 wheelchairs | Persons attending workshop | Free - sponsored by workshop | Service for work | 30 | | |

TABLE III-1
METRO TORONTO

- 4 -

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|-------------------------------|--|--|-------------------------------|--------------|----------------------|---------------------|--|-----------------|
| Society for Crippled Children | 3 vans | 4-5 passengers | Children under age of 4 | Free to user | For Treatment | 20 | | |
| Baycrest Day Centre | Hires 4 buses 1 van some taxis also used | 4 buses totals 4-5 wheelchairs in van | Elderly people for day care | Free to user | For day care | 160 | | |
| Cancer Society | 1 donated station wagon by Xerox company | 14 persons | Cancer patients for treatment | Free to user | Medical treatment | 28 | | |

TABLE III-2

WINDSOR

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|-------------------------------|---|------------------|--------------------------------------|----------------------|---|---------------------|--|--|
| <u>SERVICE ORGANIZATIONS:</u> | | | | | | | | |
| St. Vincent de Paul | Occasional voluntary driving services automobiles | | Elderly and Handicapped | None - all voluntary | Transport all kinds of needy | 20 trips a month | Voluntary | Voluntary |
| Red Cross | Passenger cars (5) | 1 - 2 | Elderly | | | 2 trips daily | Voluntary | Voluntary |
| CNIB | Passenger cars | 1 - 2 | Clients of CNIB to med. appointments | Free to user | Day prior to appointment | 8 trips daily | Voluntary | Voluntary |
| <u>GOVERNMENT OPERATORS:</u> | | | | | | | | |
| WOW Bus Wheels-on-Wheels | 1 bus | 30 wheelchairs | Handicapped & Elderly | Free | 2-3 days prior to outing. Will loan to any organization but they must secure helper if necessary. | | Not recorded | Govt. C.S.S. subsidized Huron Lodge Operated |
| <u>COMMERCIAL SERVICES:</u> | | | | | | | | |
| Checker Cab Ltd. | 5 wheelchairs cars | 1 wheelchair | Handicapped & Elderly | Depends on distance | | 30 trips daily | \$42,499 (1973) | Clientele |
| Taxi Co. Board of Education | Checker Cab Co. buses and taxis used | | No children | | Under contract Bd. of Educat. | 340 trips daily | | Windsor Board of Education |

TABLE III-2

WINDSOR

- 2 -

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|--|--------------------------|--------------------|--|--------------|---|---------------------|--|----------------------------|
| ORGANIZATIONS WITH OWN VEHICLE: | | | | | | | | |
| Churchwood Pre School | 3 vehicles | 21 school-children | Mentally retarded, functional physically retarded | Free to user | 8 am - 9:15 am 11:15 am - 1 pm 3:30 - 5 pm | 4.5 hrs a day | \$2,769 | Voluntary and United funds |
| Canadian Red Cross | 1 bus 1 station wagon | 30 children | C.P. Assoc. | Free to user | 24 hrs a day | | \$2,650 | Kinsmen and United Funds |
| Churchwood Residence | 2 vehicles | 20 adults | Emotionally disturbed | | | | | |
| C.N.I.B. | 1 station wagon | | Wagon is used for emergencies only taxis or p.t. taken daily | Free to user | 11 hrs a day for each car | 8 trips a day | \$6,210 | Kinsmen |
| ARC Industries | 2 Ford Econoline | 4-8 people | Mentally retarded - no wheel-chairs. | Free to user | Daily trips to work | 12 trips daily | | |
| Windsor Western Hospital IODE | 1 small bus | 12-18 people | Mentally retarded primarily | Free to user | Used for medical appointments. Arrangement made by appointment. | 10 trips daily | \$3,000 | Through hospital |

TABLE III-3
THUNDER BAY

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|---|---------------------------------|--------------------------------|---------------------------------|-------------------------------------|--|-----------------------------|--|---|
| <u>SERVICE ORGANIZATIONS:</u> | | | | | | | | |
| Volunteer Bureau | Volunteer cars | As in regular passenger cars | Physically handicapped | Free | On call | 10 | % of Volunteer Bureau budget approx. \$50/month | Volunteers |
| St. John's Ambulance | 2 mobile first aid panel trucks | Each truck: 3 or 4 wheelchairs | Physically handicapped | Free | - | 6 people, 1 evening per mo. | \$240/year | St. John's Ambulance |
| C.N.I.B. | Volunteer cars | As in regular passenger cars | Blind | Free | Service day-to-day needs | - | - | City Volunteers Bureau Lions Club GYRO Club |
| W.J. Griffis Development Centre for Retarded Children | Taxi | As in regular passenger cars | Mentally handicapped children | \$1.75/day per child | | | \$9,047.05 (1973) | |
| Beacon Hill Lodge | City bus volunteers | | Elderly | Free | | | | |
| Cancer Treatment and Research Foundation | Volunteers, taxi | As in regular passenger cars | Cancer patients | Free | | | \$1,598.41 (1973) | |
| <u>GOVERNMENT OPERATORS:</u> | | | | | | | | |
| Lakehead District R.C. Separate School Board | Taxi | As in regular passenger cars | physically handicapped children | free - if have medical certificate. | Made by trans. officer. Medical certificate required | 32 | \$3,200/year | Prov. Ministry of Education |

TABLE III-3
THUNDER BAY

- 2 -

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|---|--------------------|--------------------------------------|---|-----------------------------------|-----------------------------|---------------------|--|---|
| Lakehead Board of Education | Taxi | As in regular passenger cars | Physically handicapped children | Free | | - | \$20,787 (1973) | Prov. Ministry of Education |
| City of Thunder Bay Social Services | Taxi | As in regular passenger cars | Clients | Free | When required | | \$900/year | City of Thunder Bay |
| <u>COMMERCIAL SERVICES:</u> Henderson's Taxi | 14 taxis | As in regular passenger cars | P.H. children | Contact fare paid by School Board | Regular service school days | | \$2,300 | Lakehead Board of Education Westmount Hospital |
| <u>ORGANIZATIONS WITH OWN VEHICLE</u> Grandview Lodge and Dawson Court | 1 Bus | 26 passengers | Elderly | Free | Service day-to-day needs | | Total: \$4,000/year | |
| Northwestern Ontario Crippled Children's Centre | 1 Van 1 Taxi | Van - 12 passengers 2 wheelchairs | Physically handicapped children | Free | Service day-to-day needs | | \$7,000/year per van | |
| Harmony Place | 1 Bus | 9 persons, 2 wheelchairs | Physically & psychosocially handicapped | Free | Service day-to-day needs | 7 | \$1,235/year + driver | City of Thunder Bay |
| Kinsmen Lodge | 1 Van | 8 passengers | Residents | Free | Service day-to-day | 1 | \$500/year + driver | Lakehead Association for Mentally Retarded |

TABLE III-4
KINGSTON

| | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|----------------------------------|----------------------------------|---------------------------------|---|--|---|--|--|--------------------------------------|
| <u>SERVICE ORGANIZATIONS:</u> | | | | | | | | |
| Social Planning Council | Occasional voluntary automobiles | Regular passenger car | Anyone of lower income | Free | Call at least 2 days in advance | 2 | Strictly voluntary | N.A. |
| Canadian Cancer Society | As above | As above | As above | Free | As above | ? | As above | N.A. |
| <u>GOVERNMENT OPERATORS:</u> | | | | | | | | |
| Rideaucrest (Old Age Home) | 1 | Regular station wagon | Residents of Rideaucrest only | Free | Book daily | 4 | \$2,000/year | Ontario Government & private sources |
| Providence Manor | 1 | As above | As above | Free | Book daily | 4 | \$2,000/year | As above |
| <u>COMMERCIAL OPERATORS:</u> | | | | | | | | |
| Kingston Bus for the Handicapped | 2 1 van, 1 bus | 6 wheelchairs 12 wheelchairs | Mainly physically handicapped children to and from school | \$3.50 return within a 5-mile radius for individual users; no fare for school-children | 2 days in advance - regular service under School Board contract | 4 - 6 individual trips school-children | \$6,000/year beyond School Board contract | Donations plus bus revenues |

TABLE III-5

SARNIA

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|--|--------------------|------------------|--|---|---|---|--|---|
| <u>SERVICE ORGANIZATIONS:</u> Point Edward Optimist Club | 1 | 25 | Senior citizens. Occasionally group of p.h. | No charge Donations accepted | Book vehicle in advance thru a club member | Aged 2 bus trips per mo. P.H. 4 bus trips/year (2.9 trips/daily aged for seniors | | Service Club Fund raising. Private and group donations. |
| <u>GOVERNMENT OPERATORS:</u> Ambulance Service | | | Residents of nursing home or homes for aged to go to hospital for diagnosis or treatment | \$5 if they do not have supplemental insurance or are not involved in home care program | By nursing home or Home for Aged or doctor in consultation with hospital. | 1 | | |
| | | | Occasionally individuals from home to hospital for therapy. | | 25% taxi 25% private 40% passenger vehicles | 16 | Monthly expenditure: \$250 caseload turns over quickly yearly \$3000 | March of Dimes and Vocational Rehabilitation |
| Voc Rehab. FDN CSS | | | 35 needing special transportation to London for diagnosis. | No charge | 5-10% City bus | | \$1070/yr for transportation to London | |

TABLE III-5

SARNIA

- 2 -

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|--|----------------------|-----------------------|--|--------------|--|-------------------------------|--|--|
| <p><u>COMMERCIAL SERVICES:</u> White Coach Lines Ltd.</p> | 1 | 28 and 8 wheel-chairs | Groups of Senior Citizens and P.h. | No charge | Book in advance | 5/mo. | \$35 for half day in Sarnia | Homes for the Aged, Nursing Homes, Agencies, and Service Clubs Occasionally the owner donates its use at no charge. |
| <p><u>ORGANIZATIONS PAYING FOR TRANSPORTATION OF THE DISABLED:</u> Lambton County Board of Education</p> | Government category | (Taxi) | 2 students | No charge | Students phone for taxi when desired (on some days students can be wheeled to school or obtain car ride) | 4 in poor weather | \$3/person/trip or \$1,200 per year | Ministry of Education |
| <p>Canadian Cancer Society (Lambton County Unit)</p> | 43 volunteer drivers | | Cancer patients between residence & hospital | No charge | Volunteer driver pool; arrange thru Society office | 2 (5,430 miles driven in '73) | Although volunteers can be reimbursed, none requests it. | |

TABLE III-5

SARNIA

- 3 -

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|--|-------------------------|--|--|--------------|--|---|--|---|
| ORGANIZATIONS WITH OWN VEHICLES: St. John Ambulance Association | 1 | 3 jump seats 3 wheelchairs | Multiple sclerosis patients to Friday night swim and monthly meetings. | No charge | Meeting dates arranged around vehicle availability | 2 for 6 persons weekly 2 for 8 persons monthly | Not recorded | |
| School for the Deaf in London | 1 (government-operated) | 30 | 20 deaf students to boarding school in London | No charge | Regular schedule | 1 Friday evening 1 Sunday evening during school year | Regular commercial bus is used | Ministry of Education and Ministry of Health |
| Centre for Children and Youth | | Staff drive own car | Occasional child and parent who do not have car or money for taxi | No charge | Arrange through Centre | 2 | Not recorded | Staff salary (Min. of Health & Min. of Community & Social Services) |
| Crippled Children's Treatment Centre | 2 | 4 jump seats & 4 wheelchairs per vehicle | 110 children to age 18 | No charge | Schedule prepared previous day | 30 | \$20,000 per year | Min. of Education: 6-15%. Min. of Health: 3-6%. Service Club: balance |

TABLE III-5

SARNIA

- 4 -

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|---|--------------------|--------------------------------|--|--|---|---------------------------------|--|--|
| Association for Mentally Retarded (have 3 separate programs using special modes for each) | 1 Van | 12 | 12 pre-schoolers | No charge | Regular schedule | 2 for 12 persons | | Capital Costs: Service Clubs - Operating Costs: 80% Lay Nursery Act, 20% United Appeal |
| Same as above | 4 Vans 1 Bus | 12 | 54 school-age students | No charge | Regular schedule | 2 for 54 persons | | Under contract to Min. of Education which pays all capital and operating costs. |
| Same as above | 3 Vans | 12 | 62 Adults using Opportunity Centre | No Charge | 50% of users take public trans. to end of line & are met by Association vehicle. | 2 for 54 persons, 4 for 18 per. | | Capital Costs: 72% Service Clubs, 25% Min. of Comm. & Social Services (Voc. Rehabilitation) Operating Costs: 70% Association, 20% United Appeal, 10% Min. of Comm. & Social Services. |
| SHARE (Starting early April) | 1 Van | 4 jump seats and 4 wheelchairs | P.H. children & adults needing transportation for social, recr. shopping, personal business, agency, general meetings or work. | No charge Donations accepted through the Office | Call office a few days in advance. Agencies may "book" vehicle a few weeks in advance | 30 | \$15,000 per year | Vocational Rehabilitation: 3% Rehab. Found.: 20% LIP: 17% SHARE: 15% Service Clubs: 20% Private Don.: 5% Other Agen.: 20% |

TABLE III-6

TIMMINS

| Organization | Number of Vehicles | Seating Capacity | Clients | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|-----------------------------------|--------------------------|------------------|-----------------------------|--------------|----------------------|---|---|-----------------------|
| <u>SERVICE ORGANIZATIONS:</u> | | | | | | | | |
| Kinsmen | Voluntary automobiles | | Mentally retarded | Nil | Voluntary | 4 monthly | | Personal |
| Kiwans | Voluntary automobiles | | Crippled children | Nil | Voluntary | | | Personal |
| Canadian Cancer Society | Voluntary automobiles | | Cancer patients for clinics | | Voluntary | | | Personal |
| C.N.I.B. | Voluntary automobiles | | Blind | Nil | Voluntary | | | Personal |
| <u>GOVERNMENT OPERATORS:</u> | | | | | | | | |
| Northeastern Psychiatric Hospital | 1 van 1 station wagon | 8 | Patients | No cost | | 2 trips into the community & 2 trips return | As of April 8/74 this service will be discontinued due to lack of funds | Provincial Government |

TABLE III-6

TIMMINS

- 2 -

| Organization | Number of Vehicles | Seating Capacity | Clientele | Cost to User | Service Arrangements | Approx. Daily Trips | Total Expenditures on Transportation of Disabled | Origin of Funds |
|---|--------------------|------------------|--|--------------|---|---------------------|--|------------------------|
| ORGANIZATION PAYING FOR TRANSPORTATION OF THE DISABLED: | | | | | | | | |
| VRS | Taxis - about 3 | 5 | Clients taking courses or in-field placement | Nil | VRS makes arrangements for the period required. | | \$30-\$50 per month as high as \$70 per month | Ontario Government |
| COMMERCIAL SERVICES: | | | | | | | | |
| Veterans' Victory Taxi | 10 | 5 | Mentally retarded | | Contract | 20 | \$14,000 in 1973 | Provincial Government |
| Van (Mini-Bus) Service for the Handicapped | 1 | 6 | Handicapped | Free | Call-in service | 30 | \$7.00 per day | LIP-Federal Government |

TRANSPORTATION EXPENDITURES FOR METRO
TORONTO PAID BY NON-GOVERNMENT ORGANIZATIONS

| Non-Government Organization Serving the Physically Handicapped | Payment to Client For Transportation (Taxis, Commercial Vans) | Transportation Costs for Own Vehicles and Operations | Volunteer Driving Costs | Total Expenditure on Transportation For the Disabled |
|--|---|--|--|--|
| Society for Crippled Civilians | \$500 | | | \$500 |
| Spina/Bifida Association | | | | None |
| Sunnyview Parents Association | \$9,300 | | (30-50 miles weekly by 15 cars) | \$9,300 |
| Sunnyview School | \$4,560 | | | \$4,560 |
| Toronto Rehabilitation Centre | \$37,247 | | 540 return trips/month by volunteers | \$37,247 |
| Tuberculosis and Respiratory Association | | | Some volunteer driving to medical appointments | None |
| Volunteer Centre c/o Social Planning Council of Metro Toronto | | | | None |
| TOTAL: | \$97,551 | \$85,860 | \$38,781 | \$222,192 |

TRANSPORTATION EXPENDITURES FOR METRO
TORONTO PAID BY NON-GOVERNMENT ORGANIZATIONS

| Non-Government Organization Serving the Physically Handicapped | Payment to Client For Transportation (Taxis, Commercial Vans) | Transportation Costs for Own Vehicles and Operations | Volunteer Driving Costs | Total Expenditure on Transportation For the Disabled |
|--|---|--|----------------------------------|--|
| Multiple Sclerosis Society of Canada | | | | None |
| Muscular Dystrophy Society | \$1,000 | | | \$1,000 |
| Ontario Federation for the Cerebral Palsied | \$1,000 | | | \$1,000 |
| Ontario Society for Crippled Children | \$2,000 | \$32,900 | | \$34,900 |
| Red Cross (Toronto, Etobicoke and North York Branches) | \$9,274 | \$19,000 | Many hundreds of volunteer hours | \$28,274 |
| Rehabilitation Foundation (includes Rehabilitation industries) | \$78 | | | \$78 |
| United Church Rehabilitation Industries | | | | None |
| Salvation Army Workshop | \$2,500 | | | \$2,500 |

TRANSPORTATION EXPENDITURES FOR METRO
TORONTO PAID BY NON-GOVERNMENT ORGANIZATIONS

| Non-Government Organization Serving the Physically Handicapped | Payment to Client For Transportation (Taxis, Commercial Vans) | Transportation Costs for Own Vehicles and Operations | Volunteer Driving Costs | Total Expenditure on Transportation For the Disabled |
|---|---|--|---------------------------------------|--|
| Canadian Parkinson's Foundation | | | Small volunteer program | None |
| Canadian Paraplegic Association (Lyndhurst Lodge Hospital) | \$850 | | | \$850 |
| Canadian National Institute for the Blind (CNIB) (includes sheltered workshops) | | \$3,100 | \$2,493 in gas for 11,082 miles | \$5,593 |
| Community Sheltered Workshops (Women's Sheltered Workshops) | \$7,244 | | | \$7,244 |
| Corbrook Sheltered Workshops | \$15,333 | | | \$15,333 |
| Costi Centre | | | Small volunteer program | None |
| Wheels-on-Wheels | | | 64,000 volunteer trips per year | None |

TABLE III-7

TRANSPORTATION EXPENDITURES FOR METRO
 TORONTO PAID BY NON-GOVERNMENT ORGANIZATIONS

| Non-Government Organization Serving the Physically Handicapped | Payment to Client For Transportation (Taxis, Commercial Vans) | Transportation Costs for Own Vehicles and Operations | Volunteer Driving Costs | Total Expenditure on Transportation For the Disabled |
|--|---|--|-------------------------|--|
| Bloorview Children's Hospital | 1,665 | \$11,200 | - | \$12,865 |
| C.A.R.D. | | | | None |
| Canadian Arthritic and Rheumatic Society | | | Small volunteer program | None |
| Canadian Cancer Society | | \$19,660 | \$36,188 | \$55,848 |
| Canadian Epilepsy Association | | | Small volunteer program | None |
| Canadian Hearing Society | \$5,000 | | | \$5,000 |
| Canadian Haemophilia Society | | | \$100 | \$ 100 |

IV - VEHICLES DESIGNED FOR THE DISABLED

In this chapter, we describe the state-of-the-art in vehicles, particularly in Canada and to some extent in the United States, and then outline the individual vehicle types of special vans, minibuses, regular transit buses, and specially equipped self-driven vehicles. Also discussed is the problem of access to subway and bus stations.

OVERALL STATE-OF-THE-ART

Wheelchairs as Vehicles

The physically handicapped person's transportation problems begin with his own personal mobility. This has been enhanced over the years by medical and other developments to increase his personal mobility through the use of special aids.

Included among special aids are wheelchairs. There are, at present, increasing efforts to design wheelchairs to provide the handicapped relative freedom in shopping centres, public parks, and other outdoor spaces where the normal mode is by walking.¹ Such wheelchairs virtually become personal transportation vehicles, and the line between special aids and special vehicles for public transportation is becoming less clear. However, we exclude developments of the wheelchair in the

1. For example, the "Batic" powered chair, produced in Britain, runs on a standard 12-volt car battery. The Transportation Development Agency is also developing an improved, powered wheelchair.

description of vehicles designed for the disabled, since they are not part of the public transportation system.

Vans and Buses

In terms of vehicles for transit systems, we refer primarily to the small "special" vans which have been adapted to accommodate wheelchairs, and mini (or "dial-a-bus" type vehicle) or large buses which have been designed to accommodate wheelchairs or at least contain special provisions to increase the accessibility of the physically handicapped.² Exhibit IV-1 provides a summary of the main characteristics of vans and buses. More details are provided below.

Although there have been improvements in recent years in all types of vehicles, few have been produced as standard models. With few exceptions, all are adapted to the needs of the disabled by modifying standard production models. For example, the special van is a standard vehicle made by major auto manufacturers and converted by special body shops to accommodate wheelchairs by having the roof raised, the interior rearranged, and a ramp or lift added.

Converting vans for wheelchair use is still in the development stage, with a small number of companies in Canada and many more in the

2. The progressive sizes of bus-type vehicles are as follows: van - 5 to 13 passengers, mini-bus - 15 to 25 passengers, small bus - 25 to 35 passengers, and large bus - 35 to 60 passengers. The sizes and definitions are not strictly rigid, but it is felt useful to structure the discussion of vehicle types by acceptable transit terminology.

EXHIBIT IV-1

VAN AND BUS CHARACTERISTICS

| Vehicle | Van | Mini-Bus | Large Bus |
|--------------------------------|---|--|--|
| Seating capacity | 5 - 13 | 15 - 25 | 35 - 60 |
| Popular makes | Ford Econoline Dodge Maxivan Chevrolet Van | Rek-Vee Twin Coach | GM Flyer Industries |
| Common interior rearrangements | Remove all seats or provide use of wheelchair and walking passengers. | Provide 4-5 spaces for wheelchairs, rest for walking passengers. | None, but proposed are (a) extra grab-rails, stanchions, and designated seats, and (b) spaces for wheelchairs on buses equipped with lifts. |
| Boarding and exit arrangements | Ramps or hydraulic or electro/mechanical lift and raised roofs. | Electro/mechanical lifts | Electro/mechanical lifts, wider doors, and lower step height are part of Trans-bus competition objectives; new GM-RTS bus has slightly lower step and wider doors. |
| Approximate Costs | Vehicle \$5,500 Modifications \$2,500 to \$6,500 | Converted Rek-Vee quote is \$25,000 | Minor modifications would be \$50/bus; providing an electro/mechanical lift costs up to \$10,000 (based on GM and Blitz estimates). |

Peat, Marwick and Partners

United States increasing their experience. In the design of mini-buses, there are now more models being produced that have features designed to accommodate wheelchairs. Aside from relatively long-range "Trans-bus" design competition in the United States, there is little development activity by major bus manufacturers to make regular transit buses accessible to wheelchairs.

Station Accessibility

Since transportation of the physically handicapped is often a door-to-door requirement, accessibility to buildings and sidewalks is very much a part of the overall intra-city mobility problem. However, to concentrate on public transportation problems, we are restricting comments on building accessibility to public transportation stations or stops.

Discussion of subway and bus station accessibility problems has primarily revolved around vertical access to subway platforms. The most recently developed subway systems in North America - Washington and San Francisco - have incorporated elevators in the station design, to give physically handicapped people in wheelchairs access to station platforms. Other cities, such as Toronto, are placing emphasis on escalators in new station design and old station upgrading. Escalators are helpful to a large group of physically handicapped, while elevators would assist those who are helped by escalators as well as those in wheelchairs.

Self-Driven Vehicles

The final vehicle to be covered is the specially adapted automobile, or van. These vehicles are designed largely for wheelchair-bound or amputee disabled people who cannot drive regular cars.

Many garages in this country are equipped to provide hand controls and other adaptations to private automobiles for disabled drivers who need special equipment. Special equipment can be ordered from a few manufacturers in Canada and many in the U.S. Specially designed cars also require longer training times, but there is only one driver training school in the country established to instruct handicapped drivers.

In Great Britain, there is widespread use of a special automobile, called the "Invucar" or "Tricycle", which was designed for use by the disabled drivers. At present, it is criticized for being deficient in its safety features, and is probably on the wane as a suitable alternative to the adaptation of regular passenger cars or vans. It appears that the trends in Great Britain are toward converted minis instead of the three-wheeled vehicles.

In the remainder of this chapter we provide details on each type of vehicle.

SPECIAL VANS

Special vans are small vehicles that have been specially adapted for the physically handicapped. They can either be vans that people in wheelchairs can board and drive themselves, or vans that are driven by others and used to transport physically handicapped people in wheelchairs. It is the latter type that we are considering at present, since it is this type of van which is proposed for new special transit services.

A description of the normal procedures for preparing a special van is provided in Exhibit IV-2. Essentially, since the major van manufacturers do not produce vans that are already specially equipped, there have developed in the U.S. and Canada many companies who sell special equipment and undertake the conversion of regular vans. Exhibits IV-5 to IV-7 at the end of the chapter show photos and manufacturers' literature of special vans.

The regular vans include the Ford Econoline, one of the most popular in Ontario, the Dodge Maxivan, often preferred because of its slightly larger size, and the Chevrolet van. In Europe, special vans are converted from the vans purchased from the major European manufacturers, such as Peugeot, Mercedes, and Renault.

The Dodge Maxivan appears to be gaining popularity because of the greater possibility of having, as well as spaces to anchor wheelchairs, perimeter seating for handicapped who are not confined to

EXHIBIT IV-2

SPECIAL VAN ADAPTATION PROCEDURES

- I. Purchase standard Ford Econoline, GM Chevyvan, Dodge Maxivan (18" longer than Ford):
- none of the major automobile manufacturers produces vans specially adapted for handicapped.
- II. Convert standard van to accommodate wheelchairs:
- at least two companies in Ontario have experience in this field (Funkraft, in Cambridge, and Gold Line in London), one company in Alberta (Para Industries) and several companies in the U.S. (e.g. R.J. Chairlift, Fred Scott and Sons, Compass)
 - some companies sell special lift or ramp equipment to be installed locally.
- III. Conversion of regular vans includes installation and adjustments as follows:
- all or some regular seats are taken out for wheelchair spaces
 - ramps, or manual, hydraulic, or electro/mechanical lifts are added, which can be semi- or fully automatic (i.e. the fully automatic can be operated by the driver without leaving the driver's seat)
 - roofs are raised for driver ease in loading and securing passengers, and comfort of passengers
 - optional features include wider loading passenger doors (for easier entry), three-level step with handrails and fold-up seats (for walking handicapped), wheelchair locks, extra heating, inside panelling, headrests, insulation, skid-free carpeting, etc.

wheelchairs. In addition, the larger the van the more flexible it has in terms of the first passengers being able to exit without obliging the last passengers to disembark first.

The extent to which it is desirable to add various features to specially adapted vans depends on the required standards. In terms of lifts, it is inadvisable to use manually-operated ramps in a transit service, since this could be quite a burden on the driver/operator. However, some form of semi-automatic (i.e. hydraulic) lift is sufficient, if the driver's responsibility includes assisting the wheelchair passenger in any case. Completely manual ramps are generally for individuals who want to economize on their own personal vans and who have someone to assist and drive for them. Fully automatic lifts with outside push-button controls are the other extreme, and useful for wheelchair handicapped drivers who do not want to depend on any outside assistance.

The costs of the special vans are shown on Exhibit IV-3. Since each special van historically has been a custom-made job for an individual or an organization, the costs vary according to the features desired. As is indicated, the range in Ontario has been between \$8,000 and \$12,000 for a fully equipped special van. In terms of providing efficient transit service, many of the features of the higher priced converted van would probably be desirable. In this case, future capital budgeting plans should take into consideration the upper level of the special van costs.

With increased demand, manufacturers will possibly consider producing a standard special van with lifts, though to our knowledge, there is no plan for this at present. The existing market in North America is only a few thousand units per year and is very fragmented in terms of the number conversion facilities.

MINIBUSES

Minibuses, i.e., those seating from 15 to 25 people, have been used over the years for a variety of transportation needs. Very few have been specially adapted for use by wheelchaired physically handicapped.

With the advent of the dial-a-bus system, which normally uses minibuses as its principal vehicle, there has been increased interest in making them more accessible to the physically handicapped. The reason is that the dial-a-bus system has as its fundamental concept a door-to-door service, which is particularly suited to the needs of the more severely physically handicapped.

The minibus vehicle which is adapted to take wheelchairs normally has four to five spaces for wheelchairs and the remainder for seats for non-wheelchaired passengers. The entire interior can be rearranged to accommodate only wheelchair passengers, but manufacturers seem to offer a model which has only a few spaces designated for wheelchairs. Therefore, the use of the minibuses for the disabled has been perceived by manufacturers primarily for service to non-handicapped or

EXHIBIT IV-3

SPECIAL VAN COSTS

| | | |
|---|--|----------------|
| <u>VEHICLE:</u> | Ford Econoline: | \$5,400 |
| | Dodge Maxivan: | 5,600 |
| <u>CONVERSIONS:</u> | | |
| <u>Lifts</u> ¹ | Manual: | \$ 300 - \$500 |
| | Hydraulic: | 800 - 1,200 |
| | Electro/mechanical: | 1,200 - 2,500 |
| <u>Safety and Other Options, e.g.:</u> | | |
| - | roof vent (12 volt fan) | \$ 45 |
| - | panelling package including installation | 200 |
| - | carpet | 155 |
| - | additional lift inside | 15 |
| - | rear bent seat (3/4 seat) | 150 |
| - | 3-bucket seats (swivel can be removed) | 150 |
| - | wheelchair clamps (4) | 200 |
| - | wheelchair lockdowns | 30 |
| - | manual ramp | 315 |
| - | air-conditioner (dash mounted) | 495 |
| - | spare tire mounted on back | <u>30</u> |
| | | \$1,785 |
| Total cost depends on extent of conversion; two extremes would include: | | |
| 1. Top line conversions with fully automatic lifts can cost in Canada \$11,000 to \$12,000. Quotation from lowest bidder for TTC pilot project was \$12,000 for converting Dodge Maxivan. | | |
| 2. With minimum equipment, including ramps not lifts, the price would be about \$8,000 in Canada. In the U.S. one manufacturer sells converted vehicles for as low as \$4,300. | | |

1. Based on U.S. as well as Canadian quotations.

ambulatory handicapped passengers, with the capability of also handling the occasional wheelchair passenger. The dual seating also provides by far the most flexible vehicle.

As the figures above show, to convert a van for wheelchair passengers costs 50% to 100% more than the purchase price of the van itself. To convert a minibus costs approximately 10% to 25% more than the purchase price of the unconverted bus. The reasons for this include the following:

- the minibus does not have to have its roof raised
- the minibus normally has safety standards and heating/air-conditioning equipment built into it
- the lift required for a minibus is not more expensive than that which has to be installed in the van.

In Canada, the two manufacturers identified who have at least design experience in this area are Ginklevan Ltd. and the Rek Vee Industries. The latter company has a prototype out on its vehicle but at present, there are no plans for production. In the United States, the Twin Coach of Highway Products Inc., appears to be more advanced. Some photos and floor plans of these minibuses are shown on Exhibits IV-8 to IV-11 at the end of the chapter, and their main features are:

1. The Ginklevan standard model has a low step, 6" or 7" from the curb, and wide doors. Without adaptation this standard model makes access easier for the ambulatory physically handicapped. The company is in the process of adapting the Ginklevan for wheelchair passengers based on an order from certain Ontario hospitals in the Hamilton area.

2. The Rek Vee vehicle has been modified for wheelchair passengers by Funkraft under licence by the Ontario Transportation Development Corporation. The modified features include five wheelchair spaces in the front of the vehicle (with fold-up seats for use when there are no wheelchair passengers) to go along with ten seated people, and a widened front door which provides space for the second step to fold up and the bottom step to lower to the ground, then be lifted up again. The lift is controlled by the driver with a proposed boarding time of one minute.
3. The Twin Coach vehicle has roughly the same interior and lift characteristics as the Rek Vee.

The cost of the Rek Vee is tentatively quoted as \$25,000, or \$2,500 more than the standard Rek Vee minibus that does not have the capability of accommodating wheelchairs. It should be available in the latter part of 1974. The costs of the adapted Ginklevan and Twin Coach vehicles is also approximately \$30,000, although the date of availability is uncertain at this time.

Minibuses that accommodate wheelchairs have not yet been used in service in Canada. Nor has one or more been incorporated into a fleet. In the U.S., adapted minibuses are being used in some demonstration projects, either as part of a dial-a-bus fleet (e.g. Haddonfield, N.J.) or as the standard vehicle used in the dial-a-bus fleet (e.g. St. Petersburg, Fla.).

Aside from special institutions which have acquired these vehicles, the other main use would be as part of a fleet serving the

walking and wheelchair handicapped. Such a vehicle fleet might be a mixture of special vans and minibuses with the composition of each depending on the needs of the population served.

REGULAR TRANSIT BUSES

The regular, large buses used in transit service are deficient in a number of ways in terms of being accessible to the physically handicapped. First, there is no provision in the regular bus for accommodating wheelchairs. Second, the first step is 17" from the ground, which is a formidable barrier to some physically handicapped. Third, the interiors have no special seating arrangements such as stanchions that can be grabbed easily by both hands, for the unsteady walking handicapped.

The minimum modifications to a bus would be the addition of grab-bars on both sides of the door at the entrance of the bus, extra stanchions in certain seats in the bus to enable a handicapped person to grab one with each hand to raise or lower himself, and the designation of seats to be reserved for the physically handicapped.

As an example of such changes in the regular bus, the equipment manager of OC Transpo in Ottawa has proposed that:³

3. Transportation for the Handicapped Ottawa-Carleton; H. Chaput
Equipment Manager OC Transpo

- two stanchions, one in either side of the bus in the first three-seater, be moved one seat, so that the three-seater becomes in effect a two-and one-seater
- grab handles be added to the inside of doors, step well panel, and a horizontal one beside the fare box
- signs be posted reserving seats for the physically handicapped.

A preliminary estimate of the cost of these adjustments is \$50.00 per bus. A preliminary schematic diagram of the proposed arrangement is shown on Exhibit IV-4.

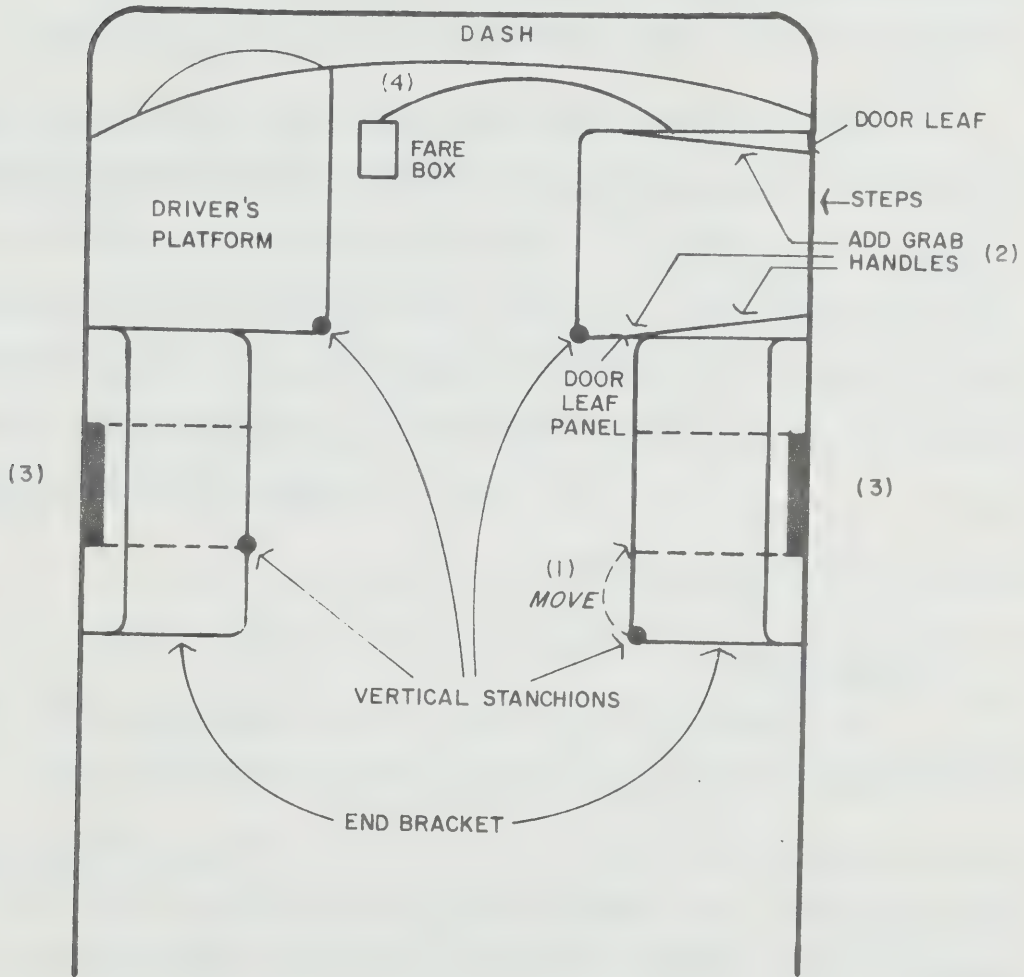
The problem of a lower step is virtually unsurmountable in the judgment of equipment manufacturers. The step height is apparently determined by the basic design of the bus and is constrained by the height of the bus floor above ground level.

One possibility reviewed by OC Transpo was to re-design the step well to add an extra step and thus lower the bottom step. However, it is considered by those in the transit industry that an extra step would increase the stairwell area and reduce the floor area adjacent to the fare box. The result would make it more dangerous to the passenger, who would have a smaller space to stand in paying his fare. Another technical problem with the extra step arrangement is the insufficient room under the floor to accommodate structural members and the axle suspension system.

EXHIBIT IV-4

PROPOSED CHANGES FOR FRONT OF TYPICAL BUS OC TRANSP

APRIL 23, 1974



- VERTICAL STANCHIONS
- (1) MOVE STANCHION
- (2) ADD GRAB HANDLES TO INSIDE OF DOORS & STEP-WELL PANEL
- (3) POST SIGNS RE: i.e. "RESERVED SEATS FOR THE HANDICAPPED"
- (4) HORIZONTAL GRAB BAR

A "flip-out" step is used on streetcars, but they run on fixed rails along the centre of the street. In the view of transit officials, a bus equipped with a flip-out step would be hazardous to incoming passengers, since buses are not on a fixed rail system. The main practical problem with this kind of step is that it is not now available for buses, and designing one would be very expensive.

There are some larger buses which have been specially adapted to accommodate wheelchair passengers. While there does not appear to be conversion facilities in Canada, there is at least one in the U.S., Blitz Body in Chicago, an outside custom body shop builder. A regular bus is re-worked to provide for the installation of a special electro/mechanical lift at the front door of the bus (see Exhibit IV-12 for a photo of a converted bus). The price per conversion of this type is quoted as \$10,000 per vehicle.

New Bus Designs

The new General Motors bus is to be introduced in late 1976 - the RTS model. It will have a kneeling feature that will lower the front step by approximately $4\frac{1}{2}$ " to 5" from the 14" high step that exists now. The rear exit door will be somewhat wider than at present as well. This bus has been designed for better performance and higher comfort to regular passengers, and not specifically for improving accessibility for the physically handicapped. General Motors has not engineered a hydraulic (or electro/mechanical lift), nor does it plan to

offer it as a GMC manufactured option when the RTS is introduced. Modifications of that type would, as at present, be handled by local suppliers.

The U.S. Department of Transportation has been sponsoring a competitive program to develop a new 40-foot bus, named "Trans-bus". Three manufacturers are building their versions of trans-bus under an Urban Mass Transportation Administration program, with the basic objective of improving service for all people. One aspect of this program is to provide better access to the physically handicapped, including those in wheelchairs. Photos and descriptions of the special features for increasing the access are presented in Exhibits IV-13 and IV-14 for each of the manufacturers.

While this competition is important to the long-run development of large transit vehicles that can accommodate wheelchaired physically handicapped, the GM-RTS is much closer to production, and is the more likely bus to be used by transit authorities for the next several years.

SELF-DRIVE VEHICLES

A number of physically handicapped people are capable of driving cars or vans with hand controls, though they may not be able to use the regular public transportation system. The three basic types of self-drive vehicles are as follows:

1. British "Invucar" - a three-wheeled small car with one seat for the handicapped driver.

2. Automobile adapted for hand controls - most automobiles can be altered so that some physically handicapped persons can drive, even though they may not have use of their legs.
3. Vans adapted for hand controls - vans can also be specially adapted with lifts to enable disabled drivers to drive without leaving their wheelchairs.

Invucar

As stated in Chapter III, there are approximately 20,000 British tricycles, officially termed as the "invucar". They are much criticized at present, and complaints about them include:

- serious instability in high winds
- extremely vulnerable in heavy traffic
- difficulty of control on poor roads or bad weather
- high internal noise
- lack of a hazard warning light
- seat which often slides sideways without warning
- positioning of the gas tank just forward of the handicapped person's knees
- inflammability of the fibre glass cabin.

A further disadvantage of the "invucar" is that only one person can ride in it at one time. This means that the spouse, for example, of a handicapped person must take public transit or another vehicle rather than accompany the handicapped person.

The reasons for the widespread use of the "invucar" is due to the policy of providing these vehicles free, while only loans are granted to handicapped people for purchasing and converting Morris "minis".

Adapted
Automobiles and Vans

Hand controls can be added to most popular makes of automobiles and can be installed by any competent mechanic. A minimum price of \$100.00 for standard hand controls has been quoted, although extras to build up seats and other features can increase the cost.

Hand controls are special equipment with few manufacturers in Canada. One that is referred to by the Cosmo Driving School is K. Labrone in Vancouver. There are also two small scale manufacturers in Southern Ontario. In the United States there are many companies selling special hand controls, as well as vans that have already been converted to use for wheelchair drivers. For example, one such car is the "Roycemobile" which has a factory and nationwide (U.S.) distribution network.

In the U.S. Ford Motor Company has been approaching a different problem - that of getting into a car from a wheelchair and then stowing the wheelchair. This company (see Exhibit IV-15) is working on modifying wheelchairs and station wagons to solve this problem.

There is only one known training school in Canada for handicapped drivers, the Chernier Cosmo Driving School in Port Credit (see Exhibits IV-16 to IV-18). According to their experience it may take up

to 75 hours to train a handicapped person. Apparently, too, this company finds that the special equipment needed in automobiles is different for each person. One problem in training is the transportation of the trainee to the driving school; often, instructors have to go to the home of the trainee (at a higher cost). The driving school also is trying to obtain funds to purchase an adapted van.

The converted automobile can cost as low as the lowest price model car plus \$100 for hand controls, while the converted van starts at \$4,300 for the "Roycemobile" (U.S. prices) and up to \$10,000 in Canada. However, while the converted automobile is cheaper, some people will only achieve mobility if they can have access to a special van that they can get into themselves.

Since the needs of physically handicapped people differ - some of them have to stay in their wheelchairs - the particular vehicles or adjustments cannot be stipulated in advance. Any prospective program to subsidize the purchase and conversion of self-drive vehicles for the handicapped should take this factor into consideration.

The use of private automobiles by handicapped persons also raises the question of parking spaces designated for the handicapped. If disabled people are to achieve greater mobility through the use of self-driven automobiles, this increased mobility can be frustrated by the problem of not being able to park close to the destination of the trip. Therefore, although not part of the equipment problem, parking is very much related to the use of self-driven vehicles.

STATION ACCESSIBILITY

There are station "barriers" to the accessibility of physically handicapped people to buses due to the lack of seats and shelters at bus stops. Accessibility can be improved simply by adding seating and shelter facilities to more bus stops.

The major question concerning accessibility to bus and subway stations is the problem of going from street level to platform level of subway stations. The problem with the subway accessibility is basically the stairs that have to be climbed by all passengers. The addition of escalators to the TTC subway and other foreign cities' subway systems for the convenience of the general public is of course beneficial to the physically handicapped as well. However, even escalators present a barrier to the severely disabled, especially to those people in wheelchairs. To make subway platforms accessible to these people requires some kind of inclinator or elevator.

Inclinator

An inclinator is a device that would be attached to an escalator or stairwell that can transport physically handicapped people in wheelchairs to the subway platform. An inclinator would be attached to the existing escalator or stairwell and be operated only when needed (possibly only in off-peak hours).

The problem with an inclinator is that no prototype exists at present. In the design of the Washington Metro system representatives of the elevator industry were approached and asked to develop an

inclinators that could be adapted to their system. It appears that the companies approached were not interested unless substantial public money were to be provided for basic research and development of the inclinators. Therefore, there remains the costly problem of developing a suitable inclinators.

Elevators

The alternative means of providing greater vertical access to and from subway platforms is through the use of elevators. Elevators were installed in the BART and are being installed in the Washington Metro systems, especially for the use of the physically handicapped.

In BART, elevators were not included in the original design of the stations and had to be added after the designs commenced, or after construction had been completed. Of the 34 stations in the system, five had been about half completed, ten approximately 70% completed, six had been constructed completely before elevators were added; another six had not yet been designed, and apparently a decision is pending on another seven stations. The total cost for these elevators originally estimated at \$7 million is now \$10 million.

In the Washington Metro, the budget for the elevator component of the subway system is \$65 million. With a total of 98 stations in the Washington Metro, the average cost for providing elevators is over \$500,000 per station. Since the total cost of the Washington Metro is estimated to be \$3 billion, that portion which is attributed to providing accessibility for the physically handicapped is about 2% of the total capital costs.

The experience in San Francisco and Washington shows that the costs of providing elevators at stations vary considerably. It depends on whether elevators are originally designed for the station and what physical barriers are presented by the station location. For example, in San Francisco above-ground stations made low-cost elevators more feasible.

The addition of elevator access to the Toronto subway system would obviously be a very complex engineering undertaking. By the year 2000, the number of TTC subway stations is expected to rise to 100 from the present 49. Costs would be different for every station, and particularly onerous for downtown ones; costs would probably be greater than those experienced by BART and Washington Metro, since a large number of completed stations in the Toronto system would have to undergo substantial renovation. Since at present, the policy for the TTC is not to include elevators in new subway stations, the costs of later providing elevators will increase as new subway stations are constructed.⁴

SUMMARY AND CONCLUSIONS

In this chapter, we have shown that there are vehicles that can accommodate the severely handicapped. Lifts or ramps that enable handicapped people's wheelchairs to board a vehicle exist for self-driven vehicles, special vans, minibuses, and large buses. However, particularly

4. The TTC is currently examining the costs and elevator access policies for the Metro Toronto subway system.

in the case of a special van, a stock production line vehicle has to undergo fairly expensive modifications to make it suitable for the wheelchair-bound disabled.

Thus, vehicles are available for the physically handicapped (though not an inclinator for subways), but they will remain fairly expensive until scale production and greater sophistication in manufacturing technology bring the unit prices more in line with standard vehicles.

There are a few inexpensive modifications that can be made to existing public transit vehicles, but the improvements are marginal in terms of really reducing the barriers to the walking disabled. Equipment managers are relatively negative on the prospects of lowering the first step of a regular bus, or any other major modification. It is difficult to conclude that such modifications have been thoroughly researched from an engineering standpoint, and that all options have been found wanting. Some improvements will be made in the regular production model of the GM-RTS bus, but significant improvements will not occur until new models, such as those being designed in the Trans-bus program, are on the production line.

Multiple wheelchair/standard seating layouts available—all with 60¼" headroom in aisle

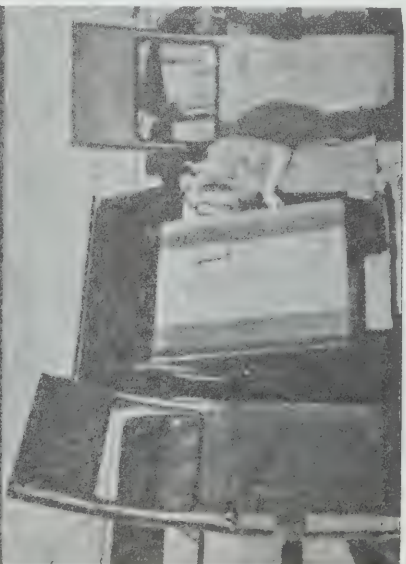
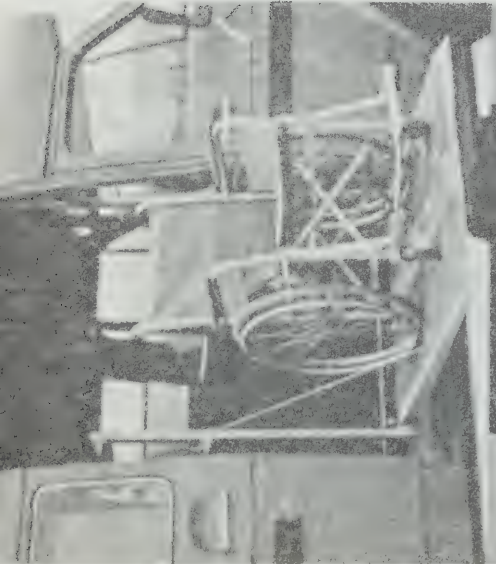
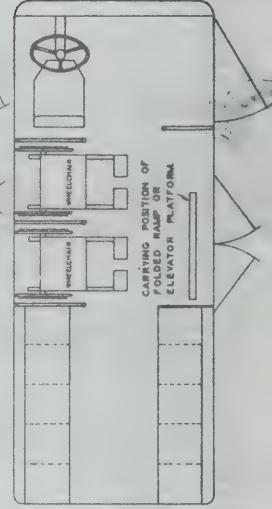
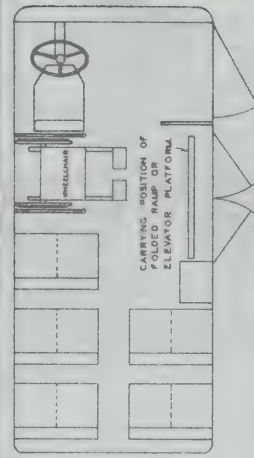
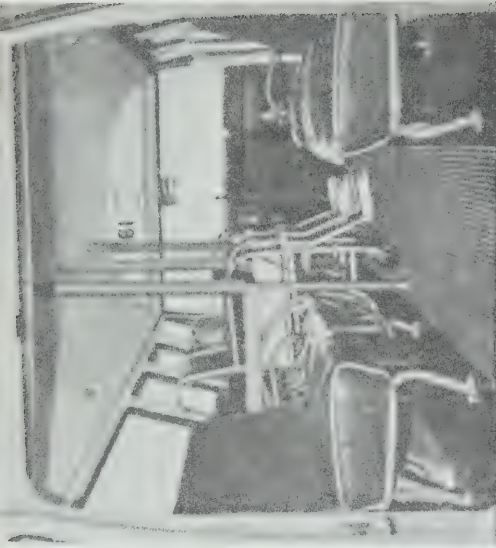
The surprisingly large 63 sq. ft. of useable floor area (Ford, Chevy, GMC, Dodge up to 70 sq. ft.) provides space for various combinations of wheelchairs and seated passenger layouts. Several popular floor layouts are shown below.

Special slotted seats with body-restraining belts for the mentally and physically troubled, are also available. The belts fit snugly around any size child's torso from waist to chest for full body support. Seat belt type buckles are designed for instant emergency release.

Hundreds of FORTIVANS for the handicapped/retarded are on the road. Ask for testimonials.

If you need FORTIVAN convincing you should hear the enthusiastic endorsement of current operators. The Ohio Board of Retardation alone purchased 148 FORTIVANS during 1971 to transport physically and mentally retarded children.

Chicago Social Welfare has contracted for 80 units. There's a FORTIVAN success story in your area. Ask for facts.



Folding Aluminum Ramp stores compactly inside bus. Light enough for easy handling, but takes heavy loads. Ramp center has non-skid coating.



A First from Funcraft THE "IRONSIDE SPECIAL"

WHEELCHAIR TRANSPORTATION AND R.V. UNITS

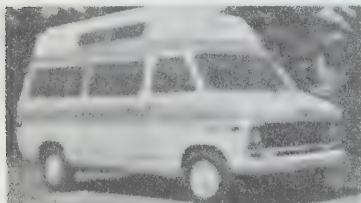
NOTE: Requires attendant to manually stow ramp and close side doors.

Wheelchair users can now travel and enjoy the "Great Outdoors" with this simple to operate hoist platform for the side doors. Positive, easy to use, chair clamp downs are also available to ensure safety "en route".

The raised "Vista Roof" permits easy manoeuvring inside with over 6' headroom so assistance can be comfortably given if needed from a standing position.

Motorhome/Camper type interior arrangements are available in several layouts, specially designed for Wheelchair users including Double Beds, Single Bunks, Toilet with special "assist handles", custom designed cut-away Kitchen Galley, etc., to make wheelchair mobility into more fun. Available as a conversion of any Long Wheelbase Van shown below.

SEE YOUR LOCAL DEALER FOR MORE INFORMATION, VEHICLE SPECIFICATIONS & PRICES.



CHEVY or GMC



FORD

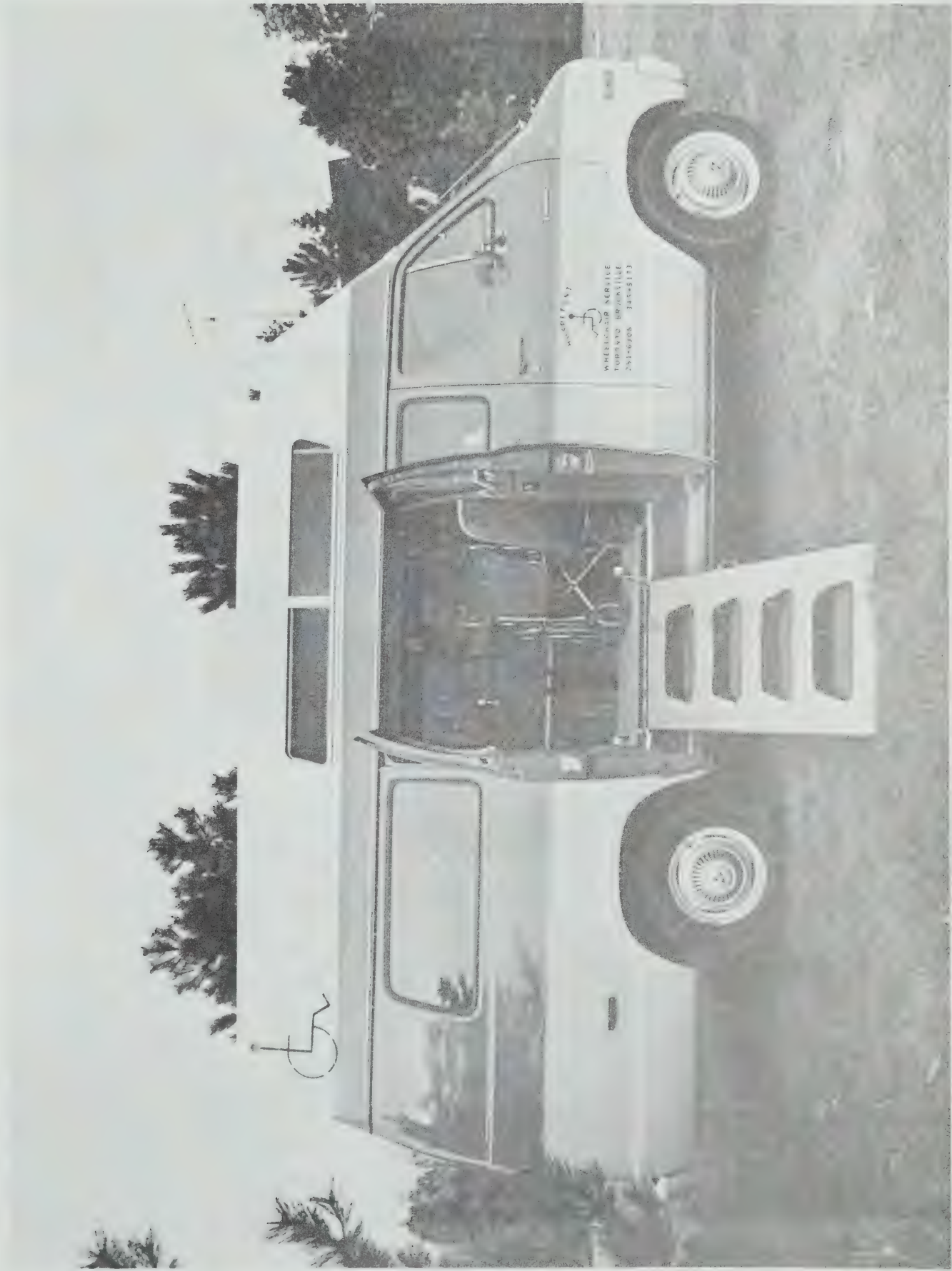


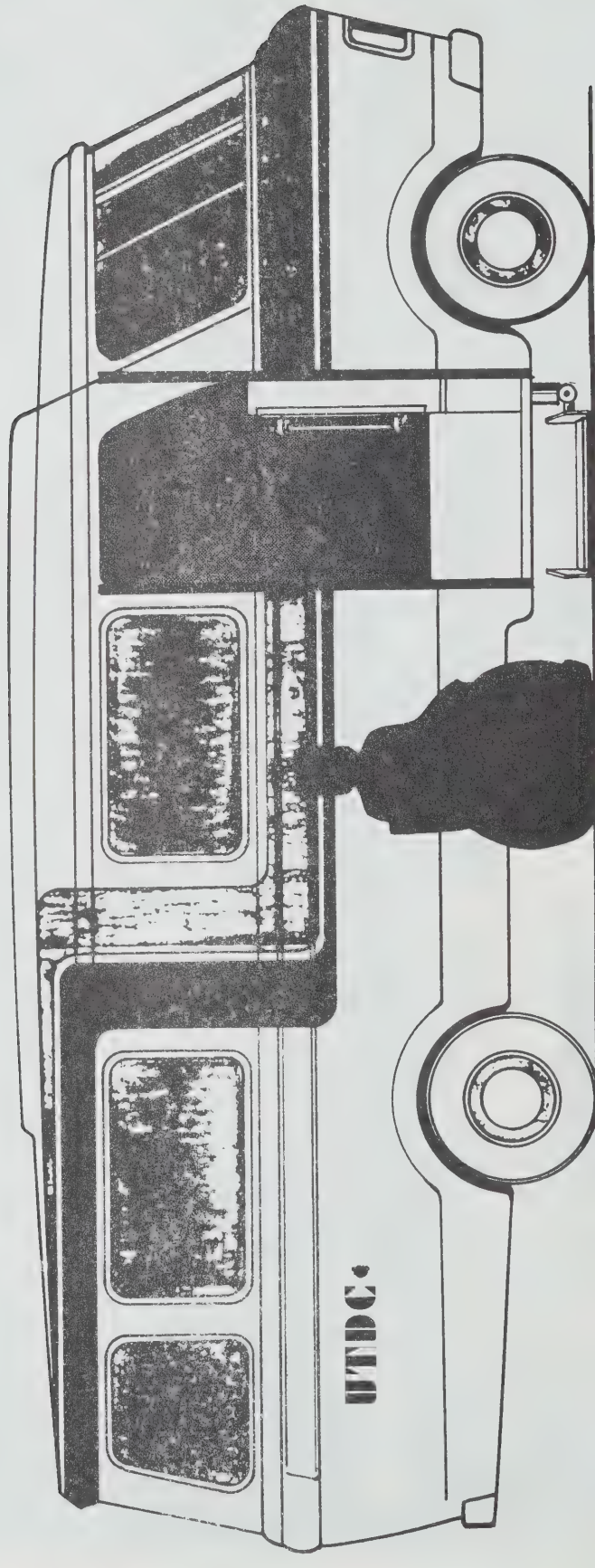
DODGE



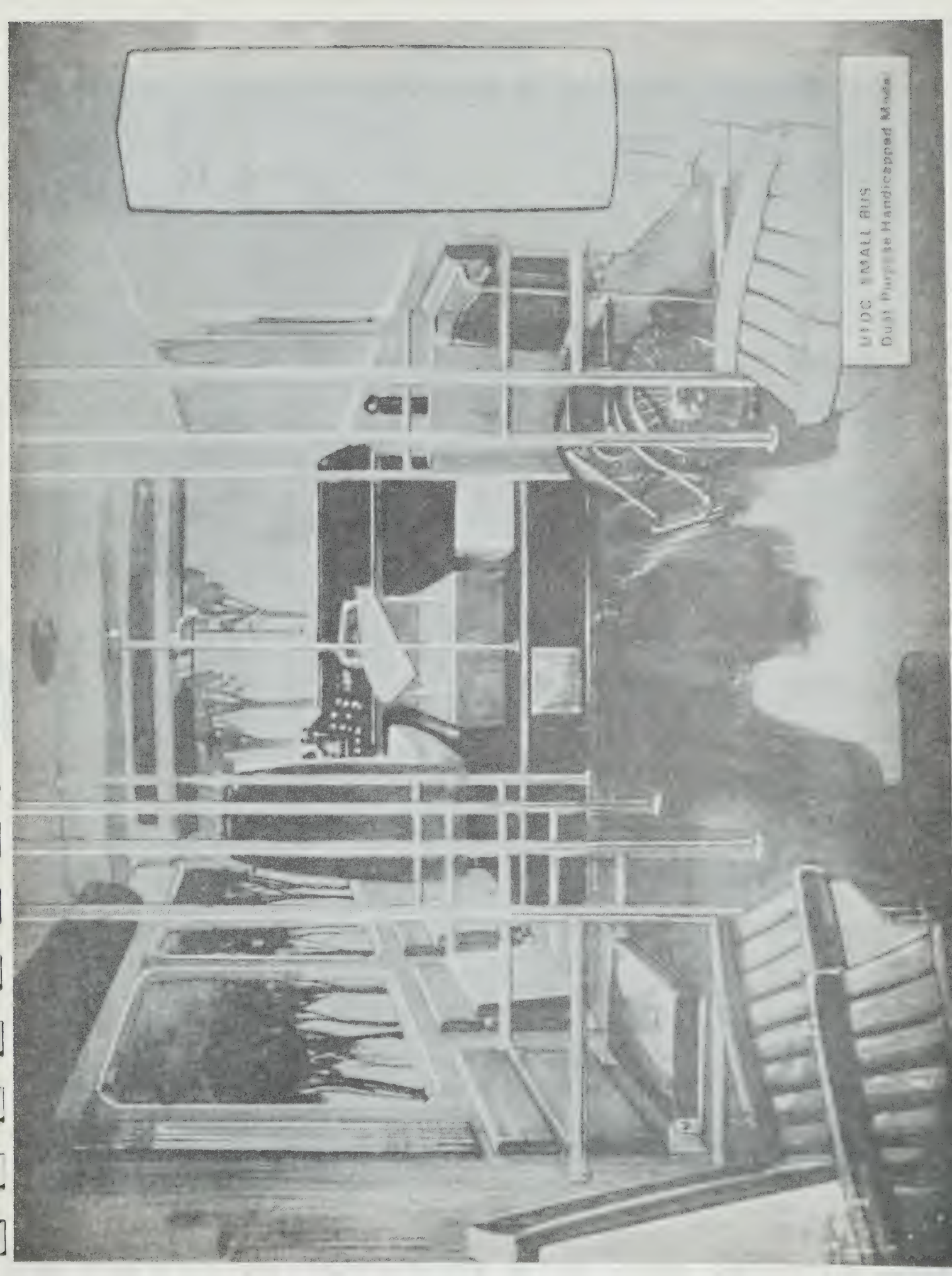
Printed in Canada

EXHIBIT IV-7

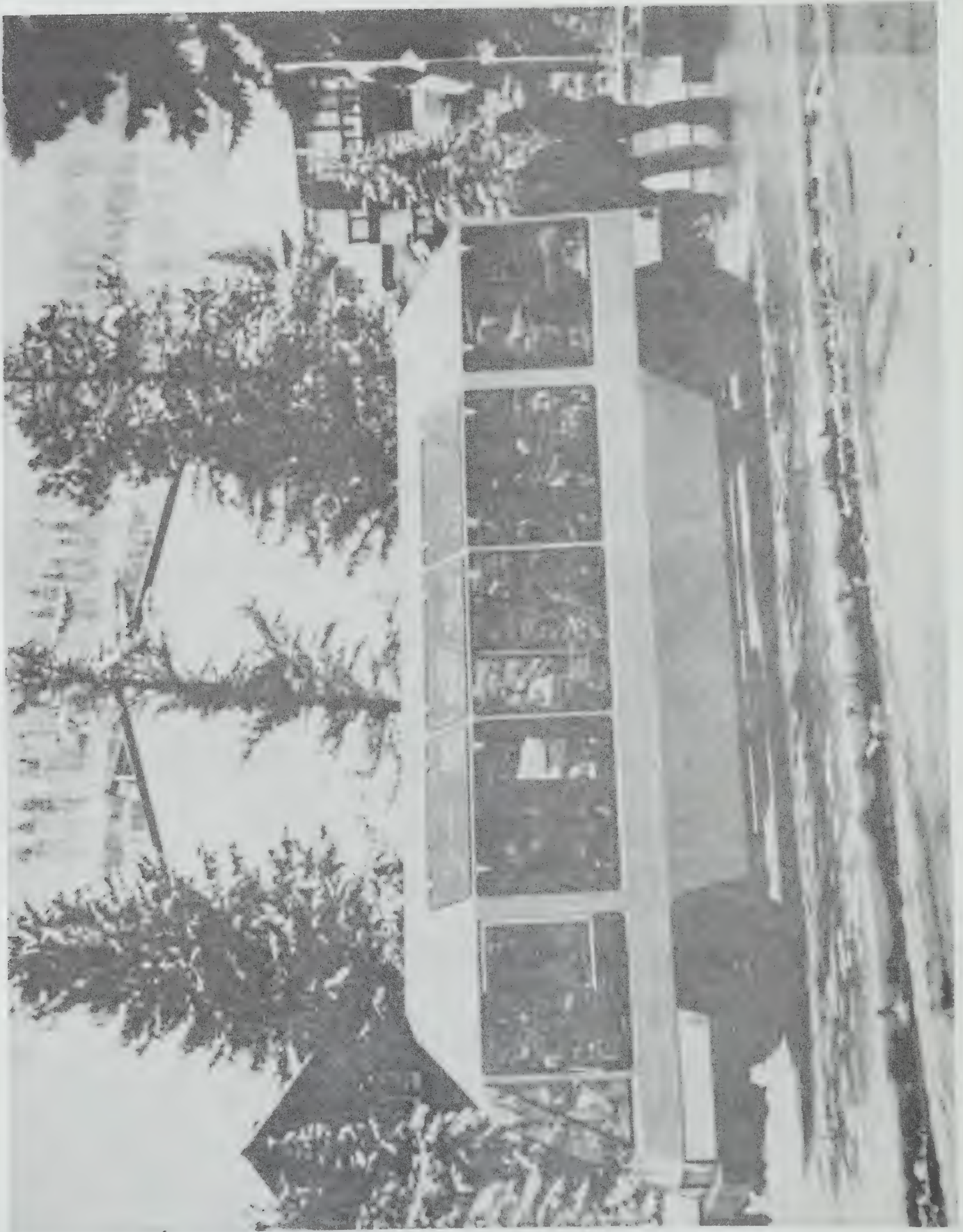


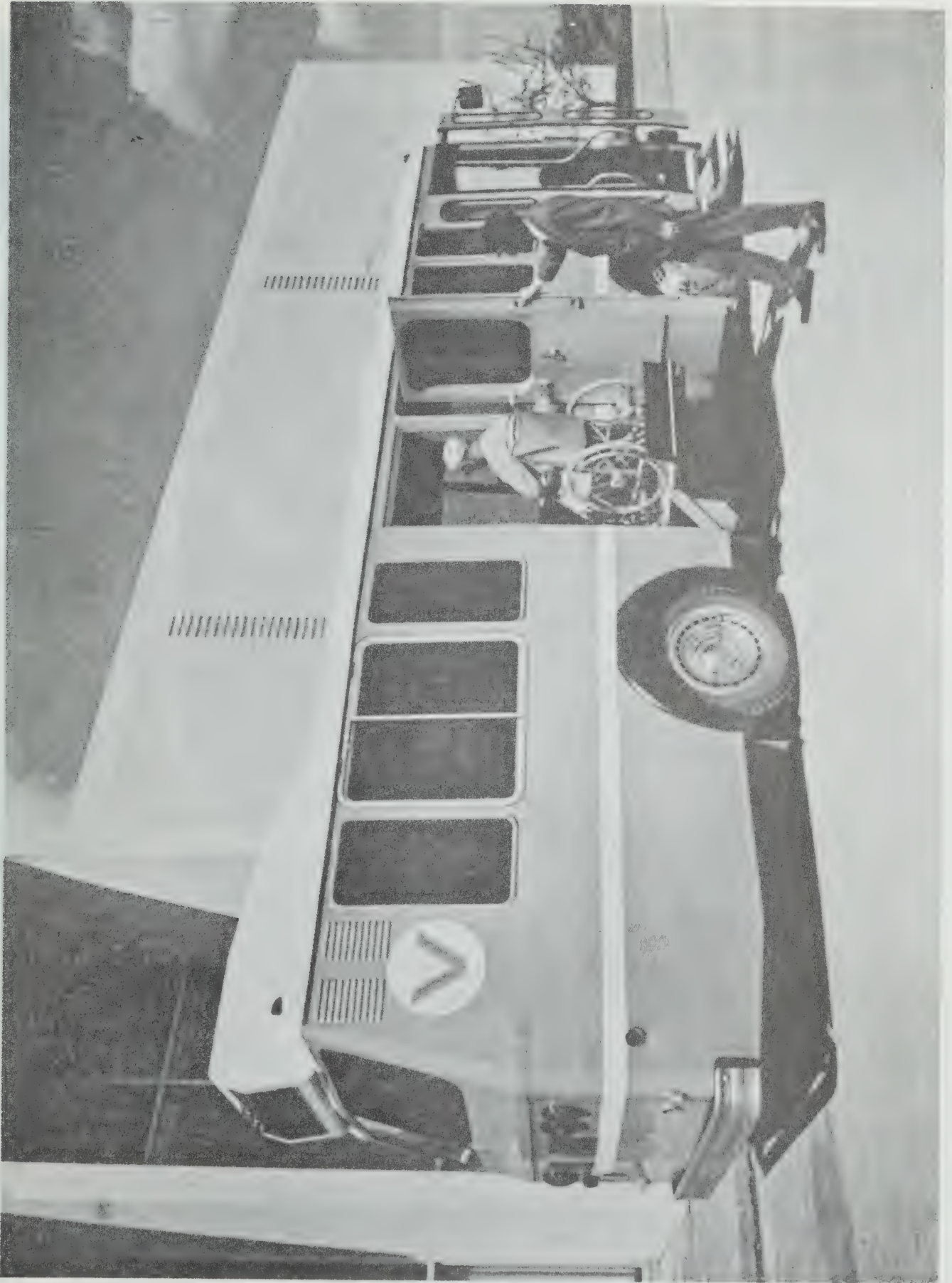


UTDC SMALL BUS
Dual Purpose Handicapped Model
lift down



MFDC SMALL BUS
Dual Purpose Handicapped Model



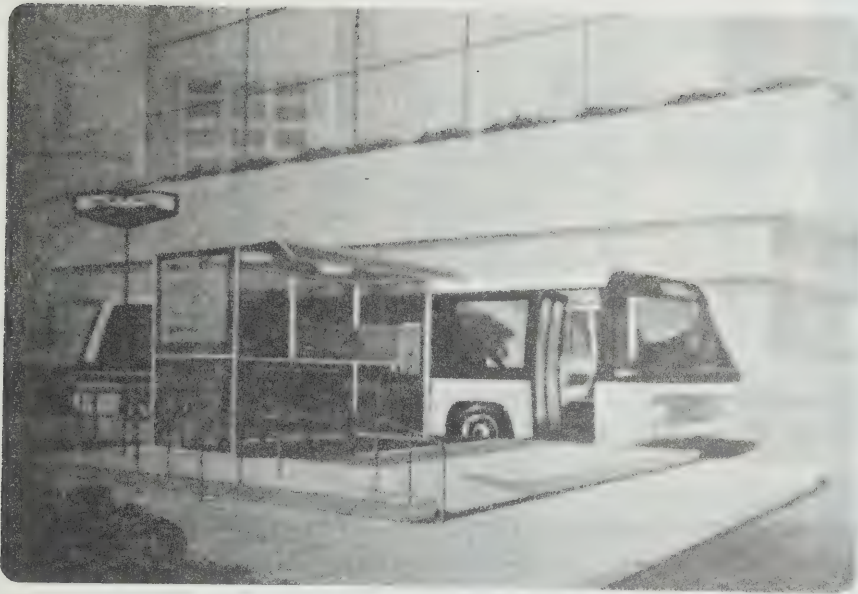


SPECIAL VEHICLE FOR
THE ELDERLY AND HANDICAPPED

TWIN COACH

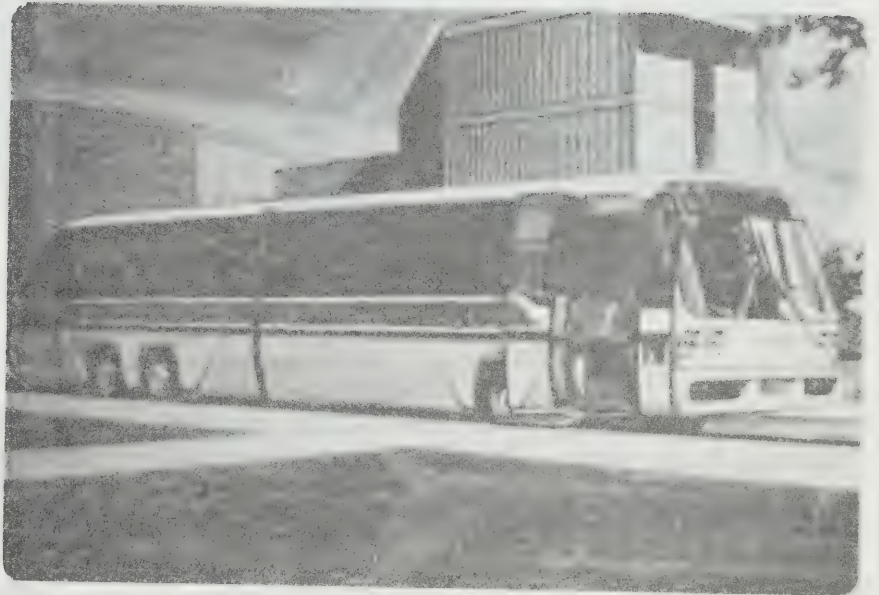
HIGHWAY PRODUCTS, INC.
KENT, OHIO 44240





A.M. GENERAL CORPORATION

GENERAL MOTORS
TRUCK AND COACH DIVISION



ROHR INDUSTRIES

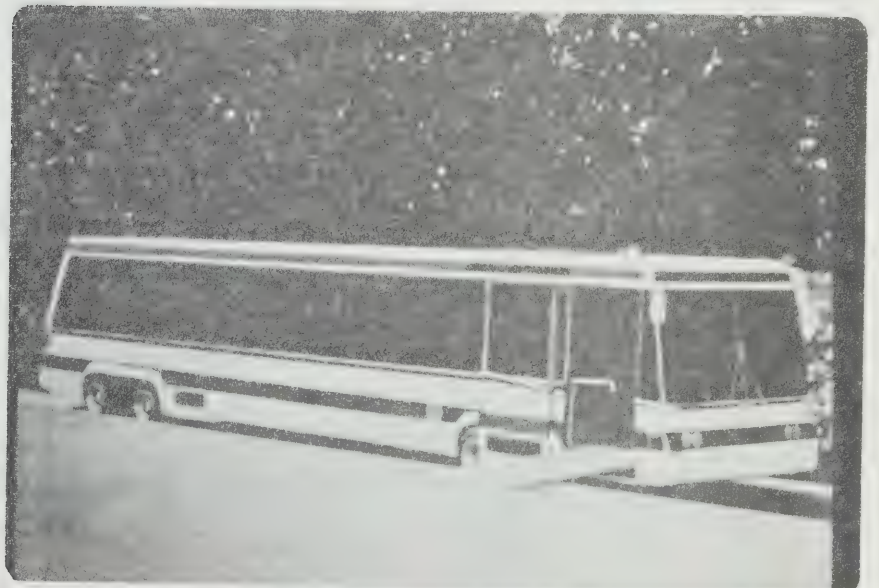


EXHIBIT IV-14

FEATURES OF THREE
MANUFACTURERS' TRANSBUS

AM GENERAL CORPORATION

The AM General concept for the removal of travel barriers provides a level, wide entry to the bus floor. The concept involves a flat ramp built into the bus which bridges the gap between the bus and a curbside platform. The AM General TRANSBUS has a special feature built into the suspension system which allows the driver to adjust the height of the bus floor to any point between 17 inches and 20 inches off the ground.

Level access to the bus is provided by a curbside platform. But because of the low floor design of the AM General TRANSBUS, the curbside platform is only slightly higher above the sidewalk than a standard curb is above the street.

GENERAL MOTORS TRUCK
AND COACH DIVISION

The General Motors concept for the removal of travel barriers provides a lift at the 37 inch wide front door. When not in use the lift is stored under the front step of the bus. The General Motors concept operates as follows. The bus pulls up to the stop and the special suspension system allows the driver to lower the bus and tilt it toward the boarding passengers. As the doors open, the front step projects out from the bus and lowers to the curb or ground as required. After the individual in a wheelchair has rolled on to the enlarged lower step, the curbside edge and two levers on the platform pivot upward to provide a secure restraint for the wheelchair and the step is raised to the bus floor level. When the individual in a wheelchair is in the bus, the step lowers back to its rest position and retracts. The door then closes and the bus can get underway.

The lower floor and wide door of the General Motors TRANSBUS make this concept practical for the first time. While current buses have a narrow entry door with two steps up, the General Motors TRANSBUS has a single wide boarding platform from which passengers step up to the bus floor. This wide platform/lower step combination becomes the wheelchair lift, as required.

ROHR INDUSTRIES

The Rohr design has the lowest floor height of any version of the TRANSBUS. In normal operation, the floor of the bus is only 17 inches above the street. At bus stops the suspension system allows the driver to lower the floor to 13 inches above the street level which is only 7 inches above a standard curb. As the front door opens, a ramp projects out from under the bus floor and lowers to the curb. Because the ramp need only rise 7 inches its total length is only 4 feet. The ramp comes from the top of the step inside the bus and the ramp projects less than 3 feet out from the side of the bus.

The Rohr TRANSBUS needs no curbside facilities and can service all existing bus stops. If a curb is not present at the top, the ramp angle becomes steeper than that specified for architectural design standards, but is typical of many ramps currently in place in public facilities.

For the past year, Ford has been working on an "improved mobility package" (IMP) in the following areas:

- Research into the specific needs of handicapped motorists, including the most severely affected, paraplegics (those paralyzed from the waist down).
- Experimental modifications to a Pinto station wagon for ease of entry and stowage of wheelchairs inside the car.
- Development of an experimental wheelchair that is narrower, lighter and easier to use and stow than conventional models.

The next step will be development of prototype IMP production hardware. If evaluation and testing of the prototypes are successful, consideration will be given to producing and marketing a complete IMP handicapped motorist kit including the unique new wheelchair.

In the 1930's Ford modified a Ford V-8 touring car used by President Franklin D. Roosevelt and later provided vehicle specifications to manufacturers developing hand controls for handicapped World War II veterans. Nonetheless, the company started virtually from scratch in its current research.

A Pinto was chosen for the IMP experimental work because it was felt a workable handicapped motorist system, if initially designed for an inexpensive subcompact vehicle, could be adapted later to larger cars.

Modifications to the Pinto, which have been evaluated by a group of Detroit-area paraplegics, include a special steering wheel, hand "assist" grips attached to the inner roof rail over the doors, a safety strap to help the driver brace himself during entry and exit, alterations to the front seat and seat track, and hardware associated with self-stowage of the wheelchair behind the driver's seat.

Development work on wheelchairs is rather unusual for automobile engineers. Modifications to existing wheelchairs were attempted first, but before long it was determined that a different wheelchair altogether was needed—one that could be used easily with passenger cars.

For example, Ford engineers found that wheels on conventional wheelchairs are too high to permit the occupant to slide onto a car seat. The 28-inch-wide chairs prevent users from passing through many door openings and have other shortcomings.

Many details remain to be worked out before either a complete IMP kit for the Pinto and other cars, or the new wheelchair alone, can be marketed. However, Ford is encouraged by the reaction of paraplegics who have evaluated its work and by the enthusiasm shown for the IMP project by both company management and suppliers.

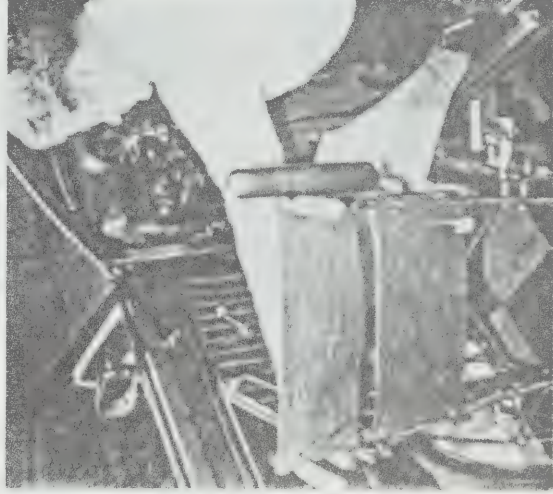
Ford Develops Equipment to Aid Handicapped Motorists

There are more than one million self-transportable handicapped persons in the United States. Until recently, little has been done to create an engineering solution to their problems of moving in and out of cars and stowing wheelchairs without assistance.

Ford Motor Company, along with the American Safety Equipment (ASE) Corporation of New York City and other suppliers whose normal endeavors are in vehicle safety and passenger comfort, is trying to develop improved equipment to help physically handicapped persons move unassisted from their wheelchairs into their automobiles and back again.

(continued on back page)

The Ford-modified wheelchair has smaller wheels than conventional chairs to facilitate an easy transfer to and from the vehicle.



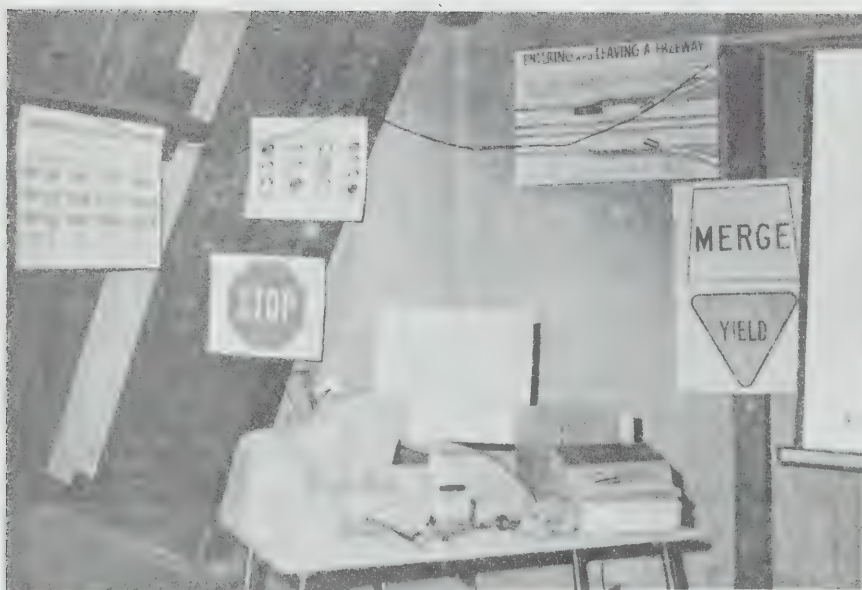
The chair is stowed with help from a metal ramp connected to the car's rocker panel and a cable and winch operated by the driver.

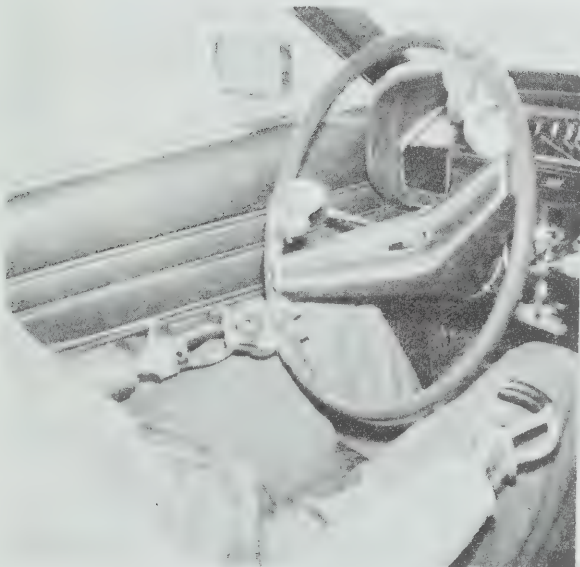


COSMO DRIVING SCHOOL, PORT CREDIT



The individual is only 4' tall, and to be able to see over the steering wheel she sits on a 3½" high seat.







V - RESULTS OF TRAVEL BEHAVIOUR SURVEYS

In this chapter, we describe the main results of the three separate surveys of physically handicapped people conducted during the course of the study. The results are compiled in a series of tables at the end of the chapter (Tables V-1 to V-21). The highlights are described below in terms of degree of disability of the physically handicapped sample populations, their socio-economic status, their perceived transportation problems, and their existing travel behaviour.

SURVEY CHARACTERISTICS

The essential characteristics of the three surveys are as follows:

1. Personal interview survey of 292 physically handicapped people in Metro Toronto (METRO TORONTO).
2. Personal interview survey of 306 physically handicapped people in five other cities in Ontario (OTHER CITIES).
3. Mailed questionnaire survey with 2,154 respondents from the lists of one private and three provincial agencies (MAIL-OUT).

The complete survey methodology is described in Appendix A to this report. A comparative summary of the three surveys is shown on Exhibit V-1.

The intent of the Metro Toronto survey was to obtain, for a random sample of physically handicapped people with mobility problems,

EXHIBIT V-1

CHARACTERISTICS OF THE THREE SURVEYS

| | MAIL-OUT | METRO TORONTO | OTHER CITIES |
|---------------------------------|--|--|---|
| Types of Survey | Mailed questionnaire | Personal interview with questionnaire | Personal interview with questionnaire |
| Sample Procedures | Random sample of four separate lists; lists were of disabled judged to have mobility problems | Random sample of handicapped organizations' lists stratified by incidence of disabilities | Random sample of handicapped organizations' lists stratified by three types of mobility limitation |
| Survey Administration | Cover letter by four agencies and return envelope | Organizations seek permission of interviewees | Organizations seek permission of interviewees; survey managed by local coordinators |
| No. of Completed Questionnaires | 2,154 (37% response rate) ¹ | 292 | 306 |
| Questionnaire Content | <ul style="list-style-type: none"> - some socio-economic data - mobility limitations - trip records - problems by mode | <ul style="list-style-type: none"> - more complete socio-economic data - mobility limitations - trip records, including O-D information - problems by mode - potential travel behaviour | <ul style="list-style-type: none"> - some as Metro Toronto, less the questions re subway and O-D information |
| Approximate Dates of Interviews | April 1974 | January-April 1974 | March-April 1974 |

1. Some of the factors lowering the response rate were:

- overlap with other two surveys
- wrong addresses
- instruction in covering letter asking people not to respond

their mobility limitations, existing travel behaviour, existing travel problems, and potential travel behaviour if some of the barriers to transportation were removed. The same basic survey was extended to five other cities in the province to determine whether the same problems existed in other cities of different sizes and in different geographic regions. The mailed questionnaire was used to extend the coverage to all of Ontario and to provide a much larger number of handicapped respondents.

The most difficult methodological problem of surveying the disabled was to select an accurate sample of the physically handicapped population with mobility problems. In each survey attempts were made to select as representative a sample as possible, but there were important constraints, as follows:

1. In the METRO TORONTO survey it was extremely difficult to locate respondents in some disability categories, and it was also difficult to screen the respondents to ensure that they in fact had transportation problems.
2. In the OTHER CITIES survey, the smaller samples (about 60) in each city prevented a stratification of the sample according to disability incidence level (which would include about 25 disabilities), and certain disabilities thus became over-represented.
3. In the MAIL-OUT survey, the universe population from which a random sample was taken was biased toward those receiving some form of government benefits (Vocational Rehabilitation and Family Benefits payments), and employees insured by the Workmen's Compensation Board.

Undertaking three separate surveys provided a means to use three alternative approaches to sample selection, and thus provided

a better basis to interpret results. The survey results substantiate the biases in the samples selected and are commented on where appropriate.

DEGREE OF DISABILITY

To determine how disabled the sample population is, we asked the following questions on the Metro Toronto and Other Cities' surveys:

- degree of mobility limitation
- the length of time disabled
- special aids used
- type of disability.

The mail-out questionnaire asked a more direct question about transportation limitations. In the mail-out survey, we asked whether the respondent could use public transportation without difficulty, with difficulty, or not at all. Through an indirect method described in Chapter VI, we determined the transportation limitation categories for the other two surveys as well.

The results of these questions are shown in Tables V-1 to V-4 at the conclusion of this chapter. The tables show that:

1. The proportionate number of handicapped in the Metro Toronto and Other Cities' surveys are divided into four mobility limitation groups as follows:
 - (a) those defining themselves as bedridden and essentially confined to home (12% to 15%);

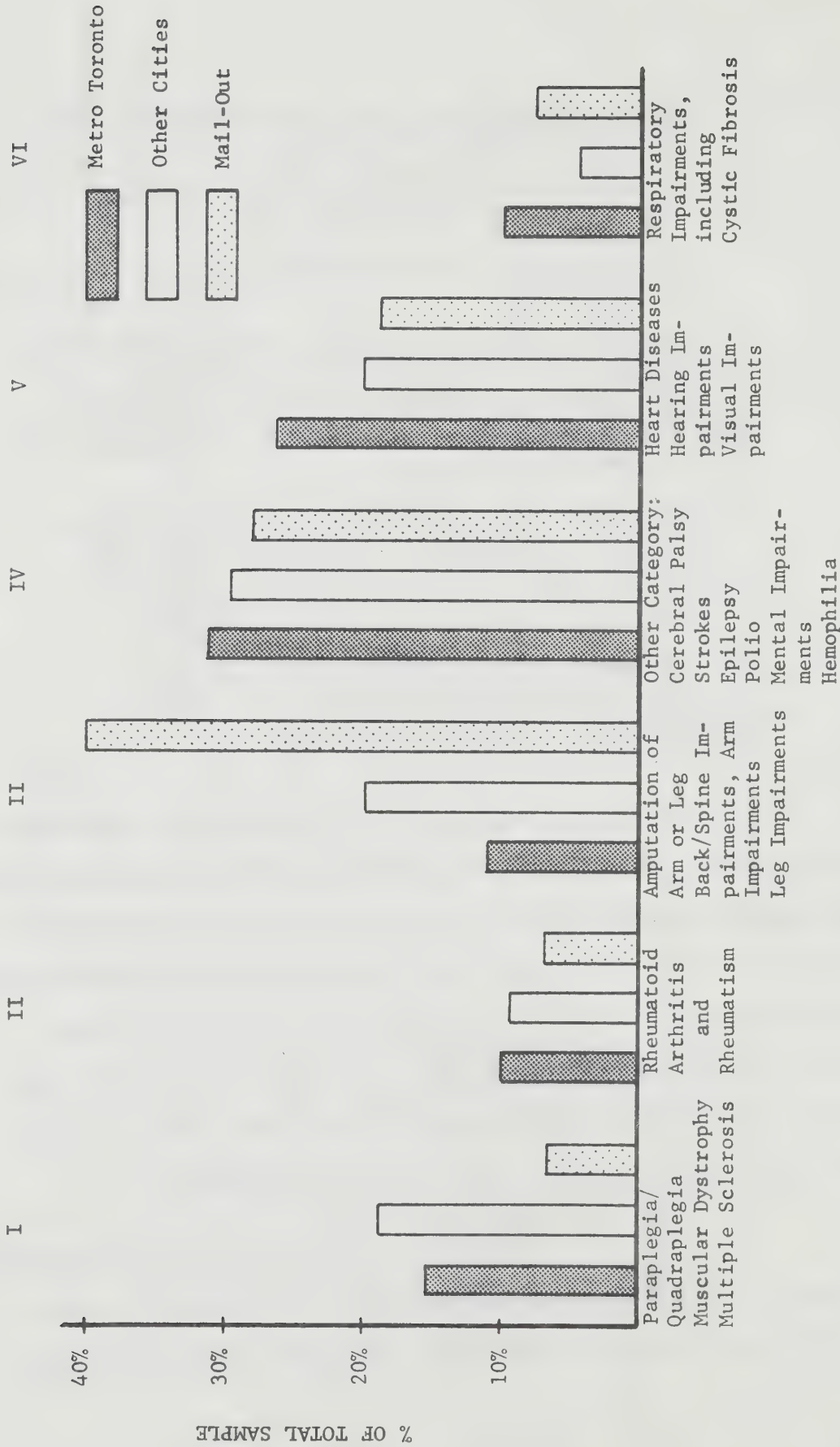
- (b) those who need the help of another person or aid to get around (42% to 55%);
 - (c) those who do not need assistance but have some trouble getting around (13% to 20%);
 - (d) those who have very few mobility problems (17% to 26%).
2. Transportation limitation results determined indirectly show that the Metro Toronto sample appears to be skewed toward the less severely disabled as compared with the sample from the other cities, and that the mail-out respondents are even less severely disabled than the Metro Toronto sample.
 3. More than half of the respondents in all three surveys had been disabled for over ten years. From the mail-out results, showing most respondents with more than a year of disability, it appears that the sample consisted almost entirely of permanently disabled.
 4. The respondents from the other cities' survey were heavily weighted toward wheelchair users; 44% use wheelchairs in the other cities' sample, 21% in Metro Toronto and 12% in the mail-out sample.

We also compared the proportions of disabilities represented by each sample. Rather than compare all 22 disability categories, they were combined into six groups shown on Exhibit V-2. The rationale for these groups is that the common feature among disabilities in each group is a similar degree of severity as indicated in the mail-out survey question on transportation limitation. For example, those with heart disease, hearing impairments, and visual impairments suffer from different disabilities, but have similar mobility problems.

This chart shows that there are differences in the proportion of disabilities represented. In Category V, Metro Toronto is somewhat over-represented compared to the other two survey samples, and to some

EXHIBIT V-2

DISABILITIES REPRESENTED IN EACH SAMPLE



MOST SEVERE

LEAST SEVERE

NOTE: The disabilities within each group have similar degrees of mobility problems, with the order of severity from left to right as indicated.

extent this is also true for Category VI. This is due to an attempt made in Metro Toronto to stratify the sample according to incidence of disability in the general population, and that people in these categories were more difficult to identify in the other two surveys. A large number of people in Category III (amputations, spine, arm, and leg impairments) in the mail-out survey is due to the larger number of Workmen's Compensation, Disability Pension and Vocational Rehabilitation recipients of provincial aid in this category. The reason that the other cities' sample includes a relatively higher number of Category I disabilities (quadraplegia, MD, and MS) is the emphasis in the other cities' survey on obtaining a good sample of those who could not use public transit. As pointed out above, the sample for the other cities was stratified according to mobility limitations rather than attempting to select them in proportion to the incidence of disability in the general population.

The composition of the three samples reflects the differences in approach to reaching people for interviews. We feel that the Metro Toronto sample is most representative of the three, but selected parts of the samples of all three surveys can be directly compared and analyzed.

SOCIO-ECONOMIC STATUS

In the Metro Toronto and other cities' questionnaire, we asked for the respondent's age, sex, income, living arrangements, current activity status, number of dependents, and four questions relating to the general attitudes of the disabled. In the mail-out survey, we asked for

sex, age and income. The results are shown in Tables V-5 to V-9.

The highlights of the results are as follows:

1. The age of the respondents is skewed towards the elderly, with Metro Toronto especially including a significant number of people over 65. The mail-out questionnaire under-represented the under-19 and over-65 groups, largely because of the composition of people receiving provincial benefits.
2. The sex distribution in the mail-out was heavily biased toward the male respondents due to the large return from the Workmen's Compensation Board recipients.
3. The income of respondents in all three surveys was very low with about half the Metro Toronto and other cities' population and more than half of the mail-out sample of people receiving as a family income less than \$3,000 a year. Metro Toronto respondents have family incomes somewhat higher than the other cities' sample.
4. Less than 20% of the physically handicapped work full time, and only about 5% work part time. However, only about 6% of the respondents in the Metro and other cities' surveys consider themselves unemployed and wanting to work. A quarter of the sampled handicapped are retired and about 15% are students (mainly schoolchildren).
5. Some handicapped people live alone or in institutions, but most live with their families, parents, or relatives. Less than 20% have dependents.
6. Handicapped people seem to feel that people are basically cooperative, more particularly bus and taxi drivers. They are less convinced that handicapped people are not an inconvenience to the general public or that they make the general public feel uncomfortable. However, while a significant minority (from 16% to 43%) have negative feelings about their rapport with the general public, the majority have relatively positive feelings.

Comparisons with the general population were made where possible, and the results are presented graphically in Tables V-10 to V-12 for age, income, and employment. These results show that in general, the surveyed physically handicapped people are older, much poorer, and less employed (though not necessarily more unemployed), than the general population.

The differences in results between the three surveys again reflect the different compositions of the sample. Metro Toronto people in the sample are somewhat older, less poor, more employed, and more independent than the other cities' sample. These survey results are consistent with the more severely disabled status of the other cities' sample, as described above.

TRANSPORTATION PROBLEMS

In the three surveys we asked questions about the problems the physically handicapped people have in using taxi, bus (and subways in Toronto), commercial vans, and automobiles. It was first asked whether the respondent used that particular mode, and then what his problems were in using it. The results are shown in Tables V-13 to V-19. Our findings are discussed below for each of these modes.

Taxi Usage and Problems

Taxi usage is relatively high among the physically handicapped, even though their incomes are low. Taxis are, of course, a very

convenient transportation service, and in many cases the only service available to the disabled.

The physically handicapped people who do use taxis find that there are various problems associated with them. About 12% to 20% give "physical problems" as the problem in taxi usage, reflecting the severity of each individual's disability. Another 10% in Metro Toronto and other cities, and 39% of mail-out respondents comment on how expensive they are, while 18% in Toronto and 9% in the other cities have problems getting taxis to provide services. The relatively high figure in the latter problem area in Metro Toronto might to some extent reflect the general level of service complaints that is apparent among the public at large at present.

Of those who do not use taxis, most of the other cities' people cite their physical disability as the reason why, while in the Metro Toronto and mail-out surveys the main reasons listed as first mentions were "do not need taxis" and "too expensive". The high "do not need" response in Metro Toronto is possibly due to good transit services, and in other cities to the dominant usage of passenger cars.

There are many complaints by physically handicapped people about their receiving poor taxi service relative to non-handicapped people, especially when they have no other alternative. The surveys show that there are problems with taxis, apart from them being too expensive, but that the large number of people who are physically handicapped appear to be using them without commenting critically on the

service. It would appear, then, that taxis form a feasible mode of transportation for most of the physically handicapped, while a small minority continue to have problems with them.

Bus Usage and Problems

As Table V-14 shows, just under a quarter of the Metro Toronto sample and slightly less than half of the other cities' sample are physically unable to use buses. Another 15% to 16% can use buses only if accompanied. Some physically handicapped people used to use buses but do not do so any more. About a quarter of Metro Toronto's sample use buses with difficulty and half that percentage of the sample in the other cities' survey use buses with difficulty. Again, these results point to a more severe degree of disability of the sample for the other cities as opposed to Metro Toronto.

The mail-out questionnaire results - Table V-15 - show that there is an even split between those who use buses and those who do not. About half of those who do not use bus travel by car instead, while the majority of the others cite physical disability as the reason for not using buses.

The results of the question about problems with bus usage show that there are many problems, but that not one particular problem is dominant. There are problems from the beginning of the journey right to the end in terms of waiting for the bus, boarding, overcrowding, getting off, transferring between bus routes, and needing accompaniment.

As hypothesized at the outset of the study, there is no one improvement that will make bus travelling very much easier for the physically handicapped, since the whole ride is a series of barriers for those who either cannot take a bus or take it with difficulty.

The mail-out survey provides a perception of barriers for those who use buses. The walking distance to the bus stop and boarding and leaving the bus appear to rise above the other problems indicated.

In Metro Toronto we asked for responses on problems with subway usage, and the results are shown on Table V-16. The differences in response pattern between bus and subway usage in Metro Toronto appear inconsequential for both the degree of use and barriers to use.

From these survey results it would appear that improving bus and subway systems would affect a small percentage of the physically handicapped who might be able to use the buses or subways if improvements were made and also those who use them now with some difficulty. The results also indicate that:

- bus routing, distance to bus and subway stations, and access to the stations or waiting at the stations are as much a barrier as the vehicles themselves
- improvements in one aspect of the bus/subway system will only make the whole system marginally more accessible and usable for the physically handicapped

- possibly training and educational sessions aimed at the physically handicapped would improve their capability of overcoming the existing barriers (not simply training to learn which bus to take, but how to use the stops with the least walking, etc.).

Commercial Van Usage

The survey results for use by the physically handicapped people of commercial vans adapted for wheelchair usage, are shown on Table V-17.

The significantly greater usage of commercial vans (which could have been interpreted to mean taxis) in other cities (27%) over Metro Toronto (8%), and mail-out respondents (7%) is difficult to interpret. The other cities' results possibly can be accounted for by the greater mobility problems in that sample.

Expense seems to be the problem most keenly felt in Metro Toronto, while inadequate service seems to be more of a problem in the other cities.

Expense and problems getting in and out of vehicles are the main factors for those who use vans and responded to the mail-out survey, while the lack of special van services in the community is a problem with some respondents. The high number who complain about vehicle accessibility probably illustrates that they perceive all manner of vehicles as special vans.

As a transportation service, commercial vans appear to be given a fairly high rating, relative to taxis and buses. However, at current rates, the ability to pay for the service remains as a major problem. This in turn limits the extent to which commercial vans have been able to develop as a service to the handicapped.

Auto Usage

Auto usage questions on the surveys were specifically about ability to drive private automobiles. The results, shown in Table V-19, indicate that about a quarter of the Metro Toronto sample population drive regularly as opposed to about a fifth of the other cities' sample. In the mail-out questionnaire, we asked whether the respondent had a driver's licence, and 38% replied that they did.

From the surveys it appears that a significant minority of the physically handicapped are auto drivers. A question which was asked in the mail-out survey tried to determine those who might be interested in driving private automobiles adapted for use by physically handicapped people. Eighteen per cent of the sample indicated that they would be interested, about three-quarters of whom had no driver's licence at present. Therefore, it appears that there would be some demand for specially adapted cars from many who are not now auto drivers.

EXISTING TRAVEL BEHAVIOUR

One of the chief purposes of the surveys was to document the existing travel behaviour of the physically handicapped. We asked each interviewee to describe his trips over the last week for the

Metro Toronto and other cities' surveys, and for three days in the case of the mail-out questionnaire. To provide an overall picture of the travel behaviour of the physically handicapped, Tables V-20 to V-25 present the travel behaviour results of the three surveys. The highlights are as follows:

1. Work trips are less frequent among the more severely handicapped. Trips for medical purposes (10% to 12% of the return trips) are probably higher than in the general population, but the figures are lower than the general population for other trip purposes.
2. The high use of taxis is the most striking feature of the mode results. Taxi usage also correlates with the severity of the disabilities of each sample and the availability of other modes, with almost 40% of other cities' interviewee trips being by taxi, a quarter of the trips by taxi in Metro Toronto and 11% in the mail-out survey.
3. The table describing the mode results also shows the very heavy use made of existing public transit in Metro Toronto and the very high dependency on the automobile by the mail-out sample. These results stem from the heavy transit orientation of Metro Toronto as opposed to the rest of the province.
4. The trip rates of Metro Toronto and other cities (1.11 and 0.97 respectively) show that in total the physically handicapped travel about half as much as the regular population (at a trip rate of 2.0). The high trip rate (1.56) of the mail-out sample shows the relatively less handicapped status of those respondents.
5. As might be expected the trip rates increase as the mobility limitation decreases; however, this tendency is not as pronounced as might be expected.
6. The table showing the dominant mode for each trip purpose (Table V-23) illustrates the extensive reliance on the automobile, particularly as an auto passenger for the non-regular trips (i.e.

shopping, leisure, and medical). The use of taxis for education trip purposes in Metro Toronto and in the other cities reflects schoolchildren transportation.

7. As Table V-24 shows, the dominant mode for the other cities' survey is as an auto passenger for the more severely physically disabled. In Metro Toronto taxi is important for this group of people. The mail-out survey results show that for all but those who must use special vehicles private automobiles and the bus system suffice for the most part.
8. Unlike those who are not restricted by mobility, whose main purpose for travelling is work, those who have difficulty travel more often for leisure, education, or shopping purposes.

In conjunction with potential travel behaviour under various hypotheses, the results shown have been cross-tabulated to arrive at demand estimates for various service options. These are described in the next chapter.

From Existing
To Future Demand

Questions were asked about future travel behaviour under different transportation improvement options. The results are presented as part of the analysis in the next chapter.

At this point, we provide the combined results of a series of questions relating to future travel behaviour. Questions 5(b), 6, and 7 asked about difficulties in finding a job, shopping and undertaking personal business outside the home, and participating in leisure activities. The results of "first mentions" are on Table V-26.

The important point about these answers is that there are more than transportation (and cost) barriers inhibiting the more active participation of the disabled in everyday activities.

People's attitudes and accessibility to building appear more significant than transportation. Therefore, caution must be expressed in interpreting future demand estimates if transportation services are improved or costs reduced.

TRIPS OUTSIDE THE CITY

Though the study focused on in-city transportation problems, there was considerable interest expressed by disabled people and government officials at the outset about inter-city transportation problems. For information purposes, therefore, part of the questionnaire requested information about travel behaviour and travel problems outside the city.

Tables V-27 to V-29 document the replies, showing that:

- about a third of respondents travelled outside the city at least once per month, if not more
- the most frequently used mode was the automobile
- the problems mentioned were a scattering set of irritations, with inaccessible washrooms perhaps the most noteworthy of those mentioned.

Inter-urban transportation problems for the disabled appears to be primarily (a) inaccessibility of public transportation modes,

(b) specialized medical facilities located only in large urban centres requiring expensive inter-urban medical trips for out-of-town patients, and (c) similarly expensive recreation trips for people who need to travel by special vehicles. A more articulated definition of these problems and work toward solving them is beyond the scope of this study.

MOBILITY LIMITATION STATUS

| Mobility Limitation | Metro Toronto (%) | Other Cities (%) | Transportation Limitation Definition | Mail-Out (%) |
|--|-------------------|------------------|--|--------------|
| Must stay in bed all or most of the time | 1% | 4% | - Because of my disability, the most convenient way to travel is by special vehicle accommodating wheelchairs. | 5 |
| Must stay in house all or most of the time | 11 | 11 | - I cannot take local buses because of my disability but can be driven by taxi or friends or drive myself. | 20 |
| Need the help of another person to get around | 11 | 12 | - I can take local buses, but only with difficulty because of my disability | 19 |
| Need the help of a special aid to get around | 31 | 43 | - There is no bus system in my community and I usually am driven by taxi or friends or drive myself. | 15 |
| Do not need the help of some special aid or another person, but have trouble getting around freely | 20 | 13 | - I can take local buses with no difficulty. | 37 |
| Not limited in any of the above ways | 26 | 17 | - No response | 4 |
| Total: | 100% | 100% | | 100% |

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TABLE V-2

BREAKDOWN OF SURVEY RESPONDENTS
IN TERMS OF TRANSPORTATION LIMITATION

| TRANSPORTATION LIMITATION (USER GROUPS) | SURVEY | | | | | |
|--|-------------------------------|-------------|------------------------------|-------------|--------------|-------------|
| | Metro Toronto ¹ | | Other Cities ¹ | | Mail-Out | |
| | No. | % | No. | % | No. | % |
| Cannot Take Local Buses, Must Use <u>Special Vehicle</u> ² | 25 | 9 | 84 | 27 | 100 | 5 |
| Cannot Take Local Buses, but <u>Can be Driven</u> , or <u>Can Drive Myself</u> | 120 | 41 | 111 | 37 | 435 | 20 |
| I can Take Local Buses Only <u>With Difficulty</u> | 58 | 20 | 40 | 13 | 407 | 19 |
| I Can Take Local Buses <u>With No Difficulty</u> | 71 | 24 | 53 | 17 | 821 | 37 |
| <u>No Bus</u> System in Community | n.a. | | n.a. | | 321 | 15 |
| No Response | 18 | 6 | 18 | 6 | 70 | 4 |
| Total: | 292 | 100% | 306 | 100% | 2,154 | 100% |

1. Since Metro Toronto and other cities' respondents were not asked to categorize themselves in this way, other responses were interpreted as explained in the footnote at the base of page VI-2.
2. "Special Vehicles" refers to a van, bus, or automobile with special equipment to accommodate wheelchair-bound or other severely disabled passengers.

TABLE V-3

LENGTH OF DISABILITY

| | Response | Less Than 1 Year | 1-5 Years | 6-10 Years | 10 + Years | Since Birth | TOTAL |
|---------------|-----------------------|---------------------|----------------|----------------|-------------|----------------|-------|
| MAIL-OUT | 3% | 2 | 19 | 17 | 40 | 19 | 100% |
| METRO TORONTO | Less Than 10 Years | 10-19 Years | 20-29 Years | 30-39 Years | 40-49 Years | 50 + Years | |
| | | 29 | 14 | 8 | 3 | 7 | 100% |
| OTHER CITIES | 43 | 24 | 15 | 9 | 3 | 6 | 100% |

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TABLE V-4

SPECIAL AIDS USED

| | Metro Toronto (%) | Other Cities (%) | Mail-out (%) |
|-------------------------|-------------------------|------------------------|--------------|
| No Response | - | - | 6 |
| No Special Aids | 43 | 29 | 44 |
| Wheelchair | 21 | 44 | 12 |
| Canes | 15 | 9 | 14 |
| Crutches | 2 | 3 | 3 |
| White Cane | 2 | 2 | 3 |
| Prosthetic Device Upper | - | - | 4 |
| Prosthetic Device Lower | 1 | 2 | 6 |
| Hearing Aid | 3 | 2 | 1 |
| Other | 13 | 9 | 7 |
| Total: | 100% | 100% | 100% |

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TABLE V-5

AGE

| | Metro Toronto(%) | Other Cities(%) | Mail-out(%) |
|--------------------|---------------------|--------------------|-------------|
| No Response | - | - | 1 |
| Under 19 | 13 | 16 | 2 |
| 19 - 30 | 14 | 18 | 24 |
| 31 - 45 | 13 | 17 | 18 |
| 46 - 64 | 29 | 28 | 40 |
| 65 Years and Older | 31 | 21 | 15 |

SEX

| | Metro Toronto % | Other Cities % | Mail- Out % |
|--------|-----------------------|----------------------|-------------------|
| Male | 50 | 42 | 70 |
| Female | 50 | 58 | 30 |

TABLE V-6

INCOME

| <u>In Dollars</u> | <u>Metro Toronto (%)</u> | <u>Other Cities (%)</u> | <u>Mail-out (%)</u> |
|--------------------|----------------------------------|---------------------------------|-------------------------|
| No Response | 0 | 12 | 13 |
| Less than \$1,000 | 10 | 22 | 13 |
| \$1,001 - \$3,000 | 37 | 35 | 45 |
| \$3,001 - \$5,000 | 19 | 11 | 6 |
| \$5,001 - \$10,000 | 20 | 10 | 10 |
| Over \$10,000 | 14 | 11 | 13 |
| Total: | 100% | 100% | 100% |

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TABLE V-7

CURRENT ACTIVITY STATUS

| Activity | Metro Toronto (%) | Other Cities (%) | Mail-out (%) |
|----------------------------------|-------------------------|------------------------|--------------------------|
| No Response | 6 | 8 | |
| Employed Full Time | 18 | 13 | |
| Employed Part Time | 6 | 4 | |
| Unemployed but could Work | 7 | 5 | Question not Asked |
| Retired | 27 | 22 | |
| Student | 13 | 17 | |
| Looking after House or Family | 13 | 10 | |
| Something Else | 10 | 21 | |
| Total: | 100% | 100% | |

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TABLE V-8

LIVING ARRANGEMENTS

| | Metro Toronto (%) | Other Cities (%) | Mail-out (%) |
|-----------------------------|-------------------------|------------------------|--------------------------|
| No Response | - | 2 | |
| Live Alone | 24 | 13 | Question Not Asked |
| With Parents or Relatives | 19 | 25 | |
| With Friends | 4 | 3 | |
| With Own Family | 43 | 29 | |
| In Residence or Institution | 10 | 28 | |
| Total: | 100% | 100% | |
| <u>DEPENDENTS</u> | | | |
| No Response | 1 | 8 | Question Not Asked |
| Yes | 17 | 19 | |
| No | 82 | 73 | |
| Total: | 100% | 100% | |

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ATTITUDES TOWARDS DISABLED

"Some handicapped people have told us that the reason they do not travel more often is because of peoples' attitude towards them. From your point of view, tell me whether you agree or disagree with the following statements:"

| Statements | METRO TORONTO | | | | | OTHER CITIES | | | |
|---|---------------|----------|-------------|-------------|-------|--------------|-------------|-------------|--|
| | Agree | Disagree | Combination | No Response | Agree | Disagree | Combination | No Response | |
| | | | | | | | | | |
| "The handicapped are an inconvenience to others" | 31% | 62% | 3% | 4% | 35% | 57% | 6% | 2% | |
| "People make the handicapped feel uncomfortable" | 43 | 47 | 5 | 4 | 36 | 54 | 4 | 6 | |
| "People are generally uncooperative towards the handicapped" | 25 | 61 | 9 | 5 | 22 | 70 | 2 | 6 | |
| "Bus and taxi drivers are uncooperative toward the handicapped" | 16 | 60 | 12 | 12 | 19 | 65 | 3 | 12 | |

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TABLE V-10

AGE DISTRIBUTION - DISABLED VS. GENERAL POPULATION

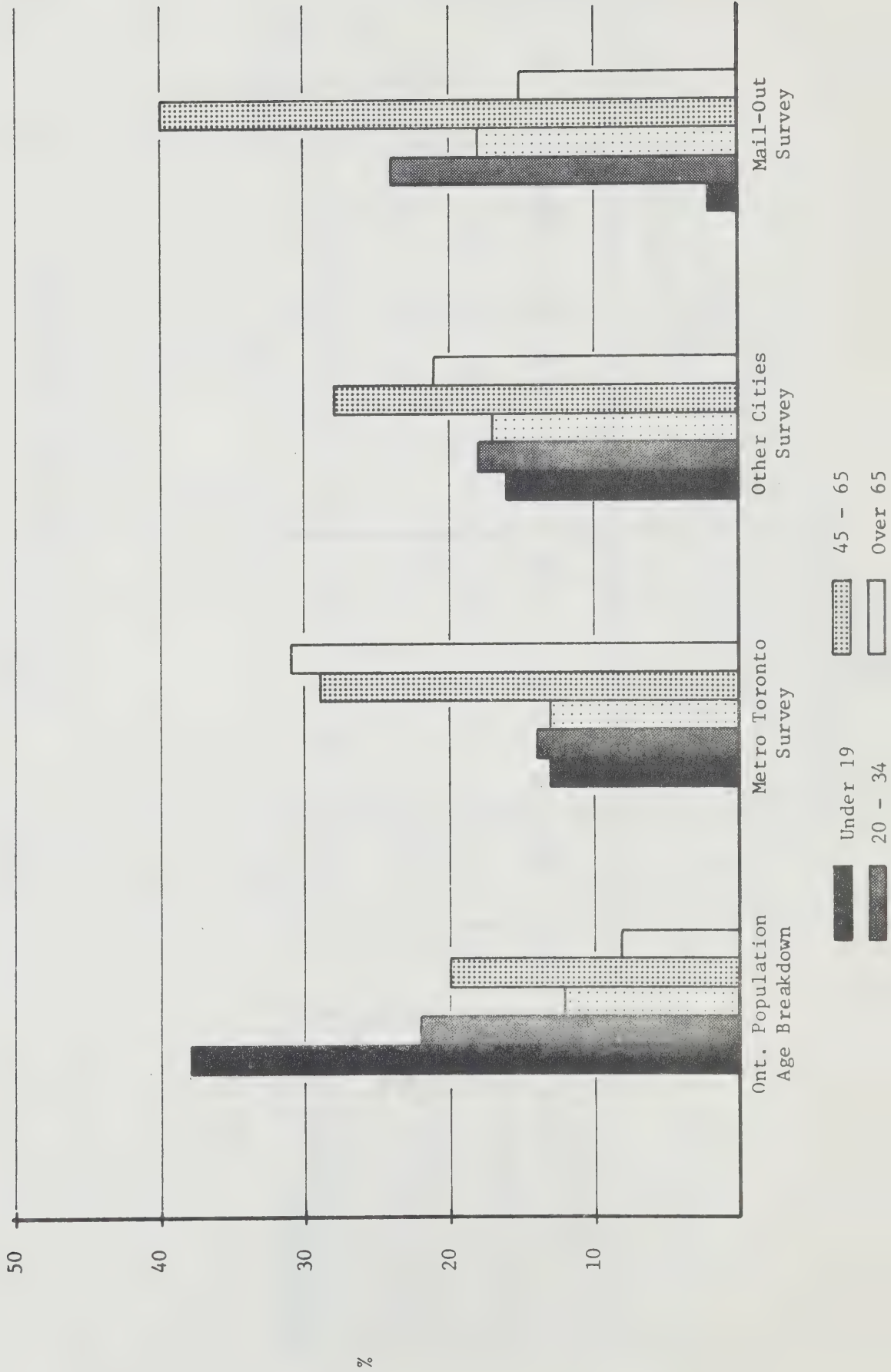
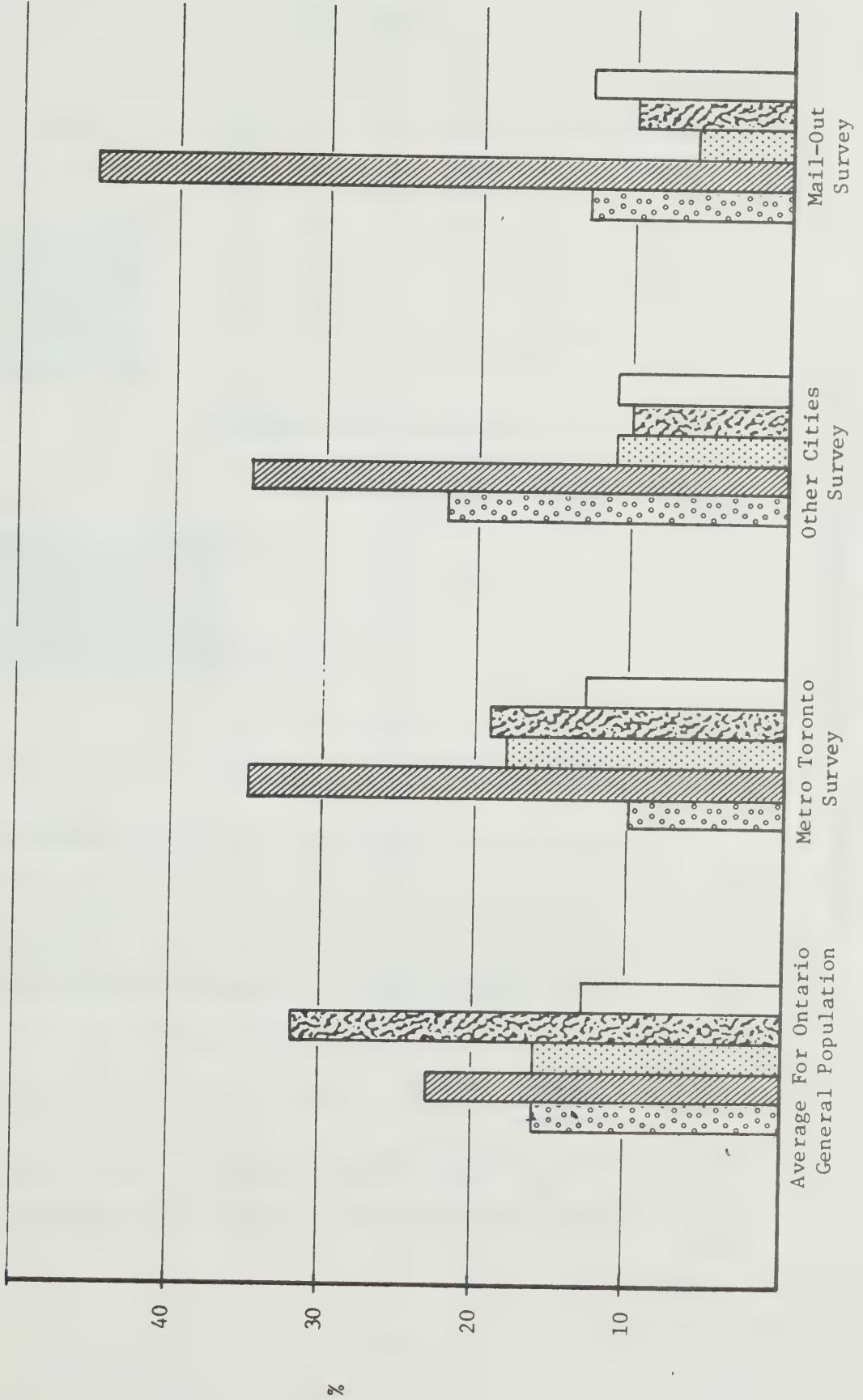


TABLE V-11

INCOME DISTRIBUTION - DISABLED VS. GENERAL POPULATION



NOTE: General Population income figures are per worker income, and survey results are family incomes.

Under \$1,000
\$1,001 to \$3,000
\$3,001 to \$5,000

\$5,001 to \$10,000
Over \$10,000

TABLE V-12
EMPLOYMENT - DISABLED VS. GENERAL POPULATION

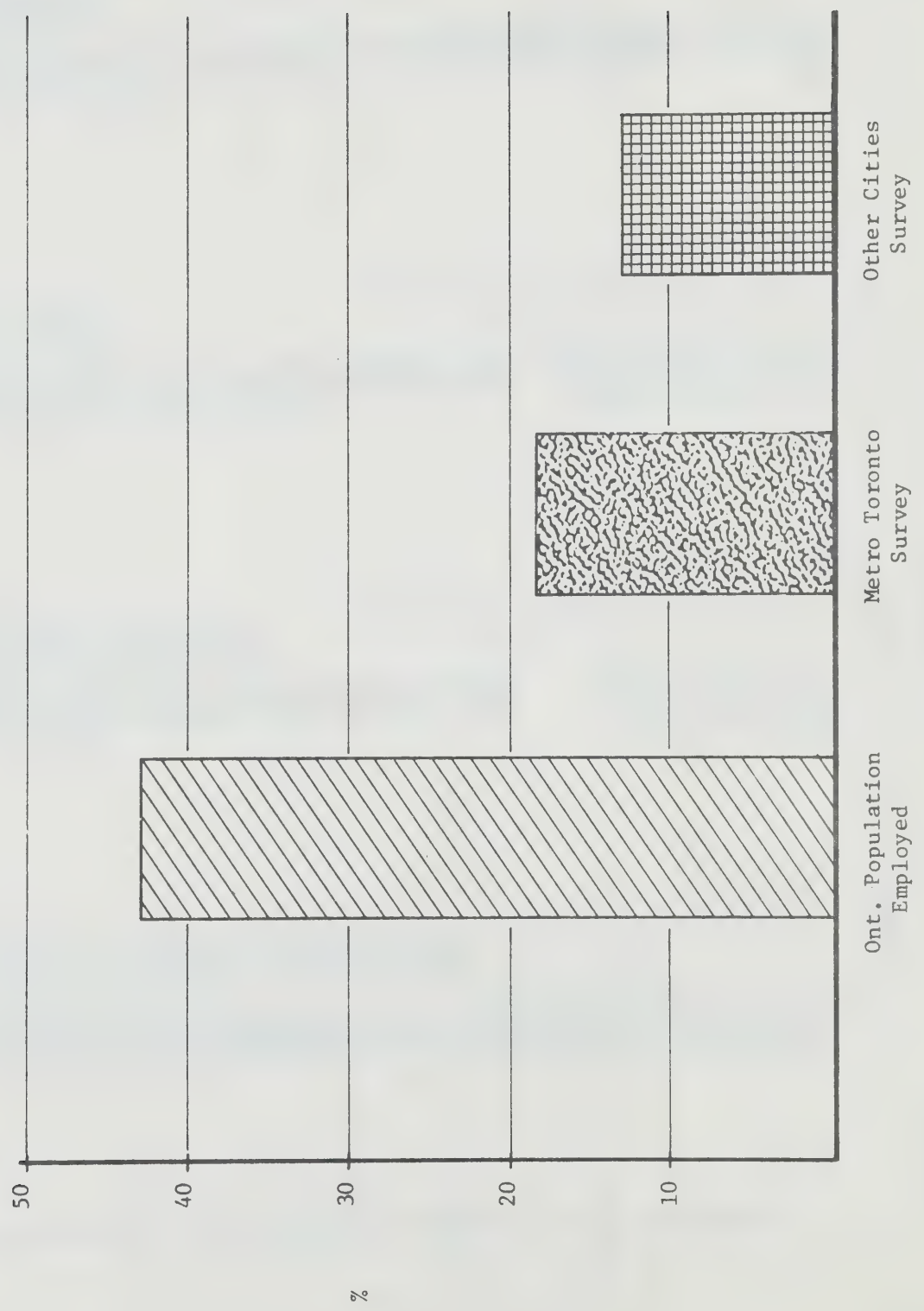


TABLE V-13

TAXI USAGE

| <u>Surveys</u> | <u>Yes</u> | <u>No</u> | <u>No Response</u> |
|----------------|------------|-----------|--------------------|
| Toronto | 54% | 36% | 10% |
| Other Cities | 54% | 37% | 9% |
| Mail-Out | 40% | 59% | 1% |

PROBLEMS WITH TAXI USAGE

| <u>USE TAXIS:</u> | <u>Metro Toronto</u> | <u>Other Cities</u> | <u>Mail-out</u> |
|-------------------------------------|----------------------|---------------------|-----------------|
| No Response | 8% | 11% | N.A. |
| No Problems | 48 | 50 | 38% |
| Physical Problems | 12 | 14 | 20 |
| Too Expensive | 10 | 10 | 39 |
| Cannot Get Taxis to Provide Service | 18 | 9 | 0 |
| Other | 4 | 6 | 2 |
| Total: | 100% | 100% | 99% |
| <u>DO NOT USE TAXIS:</u> | | | |
| No Response | 28% | 47% | N.A. |
| Physically Unable | 5 | 30 | 6% |
| Do not Need Taxis | 38 | 5 | 50 |
| Too Expensive | 23 | 5 | 40 |
| Cannot get Adequate Service | 2 | 5 | 0 |
| Other | 4 | 8 | 4 |
| Total: | 100% | 100% | 100% |

Note: Problem questions were open ended for Metro Toronto and Other Cities surveys, and first mentions only were recorded.

TABLE V-14

BUS USAGE AND PROBLEMS

| <u>BUS USAGE</u> | Toronto (%) | Other Cities(%) |
|---|------------------------------|------------------------------|
| No Response | 5% | 6% |
| Can use with no difficulty but take other means | 5 | 6 |
| Use it with no difficulty | 20 | 11 |
| Use it with some difficulty | 25 | 12 |
| Used to use it but not any more | 7 | 5 |
| Can only use it if accompanied | 16 | 15 |
| Cannot use it at all | 23 | 45 |
| Total: | 100% | 100% |
| <u>PROBLEMS</u> (1) (2) | % Answering "Very Difficult" | % Answering "Very Difficult" |
| Walking distance to/from bus | 33 | 55 |
| Waiting time at bus stop | 28 | 43 |
| Boarding and leaving bus | 36 | 52 |
| Getting in and out of seat | 13 | 38 |
| Standing in a moving bus | 43 | 61 |
| Overcrowding on a bus | 47 | 52 |
| Transferring between bus routes | 38 | 52 |
| Knowing which bus to take | 18 | 34 |
| Needing accompaniment | 36 | 51 |

1. Only those who cannot use buses were asked whether each problem was "very difficult", "somewhat difficult", or "not at all difficult".
2. Problems were read out to the respondents who were to answer "very difficult", "somewhat difficult", or "not at all difficult". We show here the percentage of respondents who replied "very difficult" to each item.

TABLE V-15

BUS USAGE - MAIL-OUT SURVEY

| | No Response | Yes | No | No System Exists |
|---|----------------|------|------|------------------------|
| Do you use Buses? | 0% | 48% | 48% | 3% |
| <u>THOSE WHO USE BUSES:</u> | | | | |
| No Response | | 0% | | |
| No problems | | 47 | | |
| Walking distance to bus stop | | 18 | | |
| Waiting time at bus stop | | 9 | | |
| Boarding and leaving bus (difficulty with steps) | | 13 | | |
| Standing on a moving bus | | 6 | | |
| Transferring between bus lines | | 2 | | |
| Drivers are uncooperative | | 0 | | |
| Others | | 3 | | |
| Overcrowding on Bus | | 2 | | |
| Total: | | 100% | | |
| <u>THOSE WHO DO NOT USE BUSES:</u> | | | | |
| No Response | | | 0% | |
| Physical disability prevents use of local bus system | | | 43 | |
| I use taxis or automobiles instead | | | 39 | |
| I cannot afford local buses | | | 3 | |
| I am uneasy in crowds | | | 5 | |
| Others | | | 10 | |
| Total: | | | 100% | |

TABLE V-16

SUBWAY USAGE VS. BUS USAGE

| SUBWAY/BUS USAGE | METRO TORONTO | |
|---|----------------------------------|----------------------------------|
| | Subway Usage | Bus Usage |
| No Response | 7% | 5% |
| Can use with no difficulty but take other means | 5 | 5 |
| Use with no difficulty | 18 | 20 |
| Use with some difficulty | 21 | 25 |
| Used to use it but not any more | 7 | 7 |
| Can only use it if accompanied | 14 | 16 |
| Cannot use it at all | 28 | 23 |
| Total: | 100% | 100% |
| <u>PROBLEMS WITH SUBWAY/BUS USAGE:</u> (1) | % | % |
| | Answering "Very Difficult" | Answering "Very Difficult" |
| No Response | 0 | 0 |
| Getting to and from subway or bus | 37 | 33 |
| Getting down to the subway | 43 | - |
| Boarding and leaving subway or bus | 24 | 36 |
| Getting in and out of seats | 22 | 13 |
| Standing on moving car or bus | 44 | 43 |
| Overcrowding on subways or buses | 47 | 47 |
| Transferring to/from bus | 37 | 38 |
| Need accompaniment | 38 | 36 |
| Waiting time at bus stop | - | 28 |
| Knowing which bus to take | - | 18 |

1. Only those who cannot use buses were asked whether each problem was "very difficult", "somewhat difficult", or "not at all difficult".

TABLE V-17

COMMERCIAL VAN USAGE

| Surveys | Yes | No | No Response |
|---------------|-----|-----|-------------|
| Metro Toronto | 9% | 85% | 6% |
| Other Cities | 27 | 66 | 7 |
| Mail-out | 7 | 92 | 1 |

PROBLEMS WITH VAN USAGE

| | Metro Toronto | Other Cities |
|-----------------------------------|---------------|--------------|
| <u>THOSE WHO USE VANS:</u> | | |
| No Response | 21% | 12% |
| No problems | 54 | 72 |
| Too expensive | 13 | 3 |
| Service provided inadequate | 4 | 8 |
| Others | 8 | 5 |
| Totals: | 100% | 100% |
| <u>THOSE WHO DO NOT USE VANS:</u> | | |
| No Response | 56% | 31% |
| Do not need service | 37 | 39 |
| Too expensive | 4 | 6 |
| Service provided inadequate | - | 10 |
| Unaware of service | 1 | 5 |
| Others | 2 | 10 |
| Totals: | 100% | 100% |

TABLE V-18

PROBLEMS WITH COMMERCIAL VAN SERVICE - MAIL-OUT

| | |
|--|------|
| <u>THOSE WHO USE VANS:</u> | |
| No problems | 50 |
| Problems getting in and out of vehicle | 13 |
| Too expensive | 18 |
| Drivers are uncooperative | 0 |
| Service is not provided as often as needed | 9 |
| Other | 5 |
| Total: | 100% |
| <u>THOSE WHO DO NOT USE VANS:</u> | |
| Do not need special vehicle | 88 |
| Service does not exist in community | 7 |
| Service exists but too expensive | 2 |
| Physically unable to use special service | 1 |
| Drivers uncooperative | 0 |
| Other | 1 |
| Total: | |

TABLE V-19

AUTO DRIVERS

| Auto Drivers | Yes | No | No Response | Total |
|--------------------------------|-----|-----|-------------|-------|
| Metro Toronto (access to auto) | 25% | 69% | 6% | 100 |
| Other Cities (access to auto) | 19 | 75% | 6% | 100 |
| Mail-out (driver's licence) | 38 | 60% | 2% | 100 |

INTEREST IN DRIVING ADAPTED CAR (MAIL-OUT):

| | |
|-------------|----------|
| No Response | 31% |
| Yes | 18 |
| No | 37 |
| Impossible | 13 |
| Too young | <u>1</u> |
| Total: | 100% |

OF THOSE INTERESTED IN DRIVING ADAPTED CARS:

| | |
|---------------------------------|-----------|
| People without driver's licence | 72% |
| People with driver's licence | <u>28</u> |
| Total: | 100% |

TABLE V-20

DISTRIBUTION OF RETURN TRIP PURPOSES

| Trip Purpose | Metro Toronto | Other Cities | Mail-Out |
|---------------|---------------|--------------|----------|
| Work | 24% | 24% | 23% |
| Education | 19 | 23 | 11 |
| Shopping | 20 | 13 | 20 |
| Leisure | 26 | 29 | 36 |
| Medical | 11 | 11 | 10 |
| Total: | 100% | 100% | 100% |

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TABLE V-21

DISTRIBUTION OF EXISTING TRIPS BY MODE

| Mode | Metro Toronto | Other Cities |
|--------------------------------|-----------------|--------------|
| Bus | 29% | 29% |
| Subway | 26 | - |
| Van | 4 | 16 |
| Taxi | 25 | 39 |
| Auto (as driver and passenger) | 15 | 17 |
| | <u>Mail-Out</u> | |
| Auto Driver | 38% | |
| Auto Passenger | 21 | |
| Taxi | 11 | |
| Wheelchair Van | 2 | |
| Bus | 25 | |
| Other | 2 | |

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TABLE V-22

EXISTING DAILY TRIP¹ RATES FOR
EACH MOBILITY LIMITATION CATEGORY

| MOBILITY LIMITATION CATEGORY | METRO TORONTO | OTHER CITIES |
|--|---------------|--------------|
| Must Stay in Bed All or Most of the Time ² | 0.79 | 0.20 |
| Must Stay in the House All or Most of the Time ² | 0.87 | 0.51 |
| Need Another Person | 0.90 | 1.00 |
| Need Special Aid | 1.01 | 0.77 |
| Trouble Getting Around | 1.21 | 1.01 |
| Not Limited | <u>1.36</u> | <u>1.24</u> |
| AVERAGE | 1.11 | 0.97 |
| TRANSPORTATION LIMITATION CATEGORY | MAIL-OUT | |
| Can Use Public Transportation With Difficulty | 1.69 | |
| Can Use Public Transportation With No Difficulty | 1.71 | |
| No Bus System, But Can Drive or Be Driven | 1.62 | |
| Cannot Use Public Transportation, But Can Drive or Be Driven | 1.44 | |
| Must Use Special Vehicle | <u>0.83</u> | |
| AVERAGE | 1.56 | |

1. Trip rates are for one way trips only.
2. The relatively high trip rates for people in these categories would appear to be a contradiction with the mobility limitation category, but respondents seemed to prefer to define their mobility status in these terms rather than in the other category options.

TABLE V-23

DOMINANT MODE FOR EACH TRIP PURPOSE

| TRIP PURPOSE | METRO TORONTO | OTHER CITIES | MAIL-OUT |
|-------------------|----------------|------------------|-------------|
| Work | Bus | Taxi-Auto Driver | Auto Driver |
| Education | Taxi | Taxi | Bus |
| Shopping | Auto Driver | Auto Passenger | Auto Driver |
| Leisure | Auto Passenger | Auto Passenger | Auto Driver |
| Medical | Taxi | Auto Passenger | Bus |
| Personal Business | * | * | Bus |

* Question not asked in these two surveys.

TABLE V-24

DOMINANT MODE FOR EACH MOBILITY LIMITATION CATEGORY

| MOBILITY LIMITATION CATEGORY | METRO TORONTO | OTHER CITIES |
|--|----------------|-----------------|
| Must Stay in Bed All or Most of the Time ¹ | Taxi | Special Van |
| Must Stay at Home All or Most of the Time ¹ | Bus-Taxi | Auto Passenger |
| Need Another Person | Taxi | Auto Passenger |
| Need Special Aid | Taxi | Auto Passenger |
| Trouble Getting Around | Auto Passenger | Auto Passenger |
| Not Limited | Bus | Auto Driver-Bus |
| TRANSPORTATION LIMITATION CATEGORY | MAIL-OUT | |
| Can Use Public Transportation With Difficulty | Bus | |
| Can Use Public Transportation With No Difficulty | Bus | |
| No Bus System, But Can Drive or Be Driven | Auto Driver | |
| Cannot Use Public Transportation, But Can Drive or Be Driven | Auto Driver | |
| Must Use Special Vehicle | Special Van | |

1. As noted in Table V-23, many respondents defined their mobility status in these two categories.

TABLE V-25

DOMINANT PURPOSE FOR EACH MOBILITY CATEGORY

| MOBILITY LIMITATION CATEGORY | METRO TORONTO | OTHER CITIES |
|--|----------------------|----------------|
| Must Stay in Bed All or Most of the Time ¹ | Leisure | Leisure |
| Must Stay at Home All or Most of the Time ¹ | Shopping-Health Care | Leisure |
| Need Another Person | Education | Work-Education |
| Need Special Aid | Leisure-Education | Leisure |
| Trouble Getting Around | Leisure-Shopping | Work |
| Not Limited | Work | Work |
| TRANSPORTATION LIMITATION CATEGORY | MAIL-OUT | |
| Can Use Public Transportation With Difficulty | Work | |
| Can Use Public Transportation With No Difficulty | Shopping | |
| No Bus System, But Can Drive or Be Driven | Work-Shopping | |
| Cannot Use Public Transportation, But Can Drive or Be Driven | Work | |
| Must Use Special Vehicle | Education | |

1. As noted in Table V-23, many respondents defined their mobility status in these two categories.

TABLE V-26

REASONS FOR ACTIVITY LIMITATIONS

| | % | % |
|--|---------------|--------------|
| | Metro Toronto | Other Cities |
| 1. No Difficulty | 1.0 | 4.0 |
| 2. Transportation Reasons | 11.0 | 11.0 |
| 3. Not being Able to Afford it | 11.0 | 12.0 |
| 4. People's Attitudes | 31.0 | 4.4 |
| 5. Difficulties in Getting Into Buildings | 20.0 | 12.0 |
| 6. Other | 26.0 | 17.0 |
| Total: | 100% | 100% |

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TABLE V-27

FREQUENCY OF TRIPS OUTSIDE THE CITY

| | TORONTO | OTHER CITIES | MAIL-OUT |
|----------------------------------|----------|--------------|-------------------------|
| Three or More Trips Per Month | 10 | 9 | (Question Not Asked) |
| One to Three Trips Per Month | 24 | 21 | |
| Less than Once a Month | 40 | 40 | |
| Never | 23 | 29 | |
| No Responses | <u>3</u> | <u>1</u> | |
| TOTALS | 100 | 100 | |

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TABLE V-28

MODE FOR TRIPS OUTSIDE THE CITY

| | TORONTO | OTHER CITIES | MAIL-OUT |
|--------------|-----------|--------------|-------------------------|
| Car | 49 | 56 | (Question Not Asked) |
| Bus | 13 | 6 | |
| Trains | 1 | 5 | |
| Combination | 2 | 3 | |
| Other | 8 | 5 | |
| No Responses | <u>27</u> | <u>25</u> | |
| TOTALS | 100 | 100 | |

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TABLE V-29

PROBLEMS WITH INTERCITY TRAVEL

| | TORONTO | OTHER CITIES |
|-------------------------------------|------------|--------------|
| No Responses | 27% | 20% |
| No Problems | 19% | 31% |
| Inaccessible Washrooms | 6% | 7% |
| Not Enough/Adequate Service | 3% | 3% |
| Disability Prevents Travelling | 13% | 12% |
| Confusion re: Schedule and Stations | 1% | 1% |
| Physical Barriers | 4% | 6% |
| Others | <u>27%</u> | <u>20%</u> |
| | 100% | 100% |

VI - TRANSPORTATION ANALYSIS: DEMAND AND COST ESTIMATES

Results of the three surveys conducted during the course of the study were outlined in the previous chapter. This chapter translates these survey findings into present and future demand estimates for various service alternatives (transportation options), for different classes of physically handicapped (user groups). From these demand estimates, we calculate equipment needs and costs of providing various levels of service for different user groups.

EXISTING TRAVEL BY USER GROUPS

Definition of User Groups

The term "user group" is the way used to categorize the disabled into their capability of using different transportation modes. These categories assign the physically handicapped to a number of "captive" transportation modes (due to their disabilities), i.e. (1) can take local buses with no difficulty, (2) with difficulty, (3) not at all but can be driven or can drive, (4) must have special vehicle. Demand estimates for new or improved transportation services can be directly related to each of these user groups.

In the mail-out survey, the disabled respondents were asked directly what category they thought was most appropriate to their transportation situation. In the other two surveys, respondents were

EXHIBIT VI-1

BREAKDOWN OF SURVEY RESPONDENTS IN TERMS
OF TRANSPORTATION LIMITATION

| USER GROUPS | SURVEY | | | | | |
|--|-------------------------------|-----|------------------------------|-----|--------------------|-----|
| | Metro Toronto ¹ | | Other Cities ¹ | | Mail- Out | |
| | No. | % | No. | % | No. | % |
| Cannot Take Local Buses Must Use <u>Special Vehicle</u> ² | 25 | 9 | 84 | 29 | 100 | 6 |
| Cannot Take Local Buses, But <u>Can Be Driven</u> Or <u>Can Drive Myself</u> | 120 | 44 | 111 | 39 | 435 | 25 |
| I Can Take Local Buses Only <u>With Difficulty</u> | 58 | 21 | 40 | 14 | 407 | 23 |
| I Can Take Local Buses <u>With No Difficulty</u> | 71 | 26 | 53 | 18 | 821 | 46 |
| Total Respondents To this Question | 274 | 100 | 288 | 100 | 1,763 ³ | 100 |

1. How respondents from the Metro Toronto and other cities' surveys were categorized is explained in the text.
2. "Special Vehicles" refers to a van, bus, or automobile with special equipment to accommodate wheelchair-bound or other severely disabled passengers.
3. The "no responses" and the "no bus system in community" were excluded.

Peat, Marwick and Partners

categorized much the same way, compared to the mail-out response categories as follows:

| <u>Mail-out Categories</u> | <u>Metro Toronto and Other Cities Categories</u> ¹ |
|--|---|
| 1. Cannot take local buses, must use special vehicle. | 1. Yes, use a commercial van (special vehicle) - response d(a) on questionnaire. |
| 2. Cannot take local buses, but can be driven or can drive myself. | 2. Cannot use buses, can use if accompanied, or used to use them but not now - 10(a), 4, 5, or 6. |
| 3. I can take local buses only with difficulty. | 3. Some difficulty but still can travel alone - 10(a), 3. |
| 4. I can take local buses with difficulty | 4. Use with no difficulty, or can use but always use other modes - 10(a), 1. |

The only difficulty in this categorization is that "must use" special vehicle in the mail-out is equated to "do use" in the other two surveys. This procedure tends to make the existing and future trip rates of this user group category relatively higher in the Metro and other cities than in the mail-out survey results.

Exhibit VI-1 lists the categories of user groups and the number of respondents in each category for each survey. This exhibit clearly shows that the other cities' survey had a sample which had a higher proportion of severely disabled than either of the other two

1. Since No.1 and Nos. 2, 3 and 4 are not mutually exclusive, all those who were categorized in No.1 were not included in Nos. 2, 3, and 4.

surveys, and that the mail-out survey had a greater percentage of respondents who have no difficulty with local buses. As discussed in Chapter V, the sample selected for the Other Cities' survey was purposely stratified to include the more severely disabled while the mail-out sample was drawn from provincial and private agency lists which included many people who were disabled but who had no transportation problems. Even though the covering letter of the mail-out survey instructed people to respond only if they had transportation problems, as the results show there was a high response rate from those who apparently do not have trouble with public transit.

User Group Trip Rates

The survey data was analyzed to determine the daily trip rate for persons in each of the four user groups developed above, for each of the three surveys. The results are shown on Exhibit VI-2. These trip rates (number of trips which a person takes in one day) were calculated for two groups of trip purposes. Work and education trips (basically pre-booked, regular trips) were analyzed as one group, while all other trip purposes (shopping, recreation, etc.) were analyzed as another group. This second group of trip purposes tends to be less regular in demand, and consequently a different service demand pattern than for work and education trips.

This Exhibit shows in general, in each user group, that daily trip rates from the other cities' survey are lower than Metro Toronto, while the mail-out daily trip rates are usually the highest of all

EXHIBIT VI-2

EXISTING DAILY TRIPS PER HANDICAPPED PERSON¹

| TRANSPORTATION LIMITATION (USER GROUPS) | TRIP PURPOSES | SURVEY | | |
|--|--------------------|-------------------------------|------------------------------|-----------------------|
| | | Metro ¹ Toronto | Other Cities ¹ | Mail-Out ² |
| Cannot Use Public Transportation, Must Use Special Vehicle | Work and Education | 0.51 | 0.30 | 0.36 |
| | All Other | 0.60 ³ | 0.51 ³ | 0.47 |
| | Total | 1.11 ³ | 0.81 ³ | 0.83 |
| Cannot Use Public Transportation, But Can Be Driven | Work and Education | 0.54 | 0.42 | 0.50 |
| | All Other | 0.48 | 0.43 | 0.94 |
| | Total | 1.02 | 0.85 | 1.44 |
| Can Use Public Transportation With Difficulty | Work and Education | 0.36 | 0.59 | 0.48 |
| | All Other | 0.85 | 0.42 | 1.21 |
| | Total | 1.21 | 1.01 | 1.69 |
| Can Use Public Transportation With No Difficulty | Work and Education | 0.56 | 0.57 | 0.74 |
| | All Other | 0.80 | 0.67 | 0.97 |
| | Total | 1.36 | 1.24 | 1.71 |
| Total Disabled | Work and Education | 0.51 | 0.44 | 0.60 |
| | All Other | 0.65 | 0.50 | 0.99 |
| | Total | 1.16 | 0.94 | 1.59 |

1. Again, it is to be noted that the Metro Toronto and other cities' survey respondents were assigned to user groups based on the assignment procedure outlined above.
 2. These results were reported earlier in Table V-22, but incorporate an extra 30 questionnaire responses primarily in the less severely disabled category. Therefore, the weighted average total in this exhibit (1.59) is slightly higher than in Table V-22 (1.56).
- Compared to the two most severe categories of Table V-22 these trip rates are somewhat high, due primarily to the category assignment procedure outlined in the footnote of the previous page. The category is literally "do use special vehicle", rather than "must use special vehicle"; it is the universe of people who would be the market for a special vehicle service.

three surveys. The difference between Metro Toronto and the other cities within the same user groups is probably due to the tendency for a lower trip rate in cities smaller than Toronto for the general population. The higher trip rate for the mail-out is likely influenced by the high percentage of Workmen's Compensation beneficiaries who might be expected to be more active and travel-oriented than the general disabled population.

In Chapter V, the observation was made that the user group trip rates seem to decrease as the disability increases in severity, although the tendency was less marked than one might have expected. The few specific inconsistencies to this general trend shown in Exhibit VI-2 indicate the roughness of the survey data.

In assessing the survey results, it is to be emphasized that while specific trip rates for specific user groups are to be interpreted with caution, the general trip rate information seems quite valid.²

The Metro Toronto survey is used throughout the rest of the chapter when developing demand estimates for Toronto. The other cities' survey is used to generate demand estimates for other urbanized areas in Ontario. The mail-out results are used to provide a rough cross-check to the interpretation of the other two sets of survey results.

-
2. The Ottawa-Carleton survey was compared to the other cities' survey. They indicated an existing daily trip rate of .7 from a sample of 900 respondents. While this rate is somewhat lower than the other cities' survey results in this study, they can be explained by the Ottawa-Carleton sample composition and questionnaire return. First, the sample tended to include a high percentage of people in institutions who are not very mobile; second, there were a large number of people (about one-third of the sample) who did not complete the trip information questions, but were included in the compilation of the average existing trip rate.

EXHIBIT VI-3

MARKET SHARE OF EACH TRANSPORTATION MODE BY TRANSPORTATION LIMITATION

| TRANSPORTATION LIMITATION | SURVEY | MARKET SHARE (%) | | | | | | |
|--|----------------------------|------------------|----------------|-----|--------|------|-----------------|---------|
| | | Auto Driver | Auto Passenger | Bus | Subway | Taxi | Special Vehicle | Total % |
| Cannot Use Public Transportation, Must Use Special Vehicle | Metro Toronto ¹ | 6 | 20 | 8 | - | 35 | 31 | 100 |
| | Other Cities ¹ | 2 | 29 | 18 | N.A. | 14 | 37 | 100 |
| | Mail-Out | 10 | 25 | - | N.A. | 10 | 55 | 100 |
| | | | | | | | | |
| Cannot Use Public Transportation, But Can Be Driven | Metro Toronto | 8 | 37 | 19 | 5 | 30 | 1 | 100 |
| | Other Cities | 9 | 45 | 8 | N.A. | 38 | - | 100 |
| | Mail-Out | 42 | 28 | 4 | N.A. | 24 | 2 | 100 |
| | | | | | | | | |
| Can Use Public Transportation With Difficulty | Metro Toronto | 23 | 27 | 22 | 12 | 16 | - | 100 |
| | Other Cities | 4 | 45 | 25 | N.A. | 21 | 5 | 100 |
| | Mail-Out | 23 | 25 | 35 | N.A. | 17 | - | 100 |
| | | | | | | | | |
| Can Use Public Transportation With No Difficulty | Metro Toronto | 26 | 11 | 41 | 20 | 2 | - | 100 |
| | Other Cities | 29 | 20 | 28 | N.A. | 19 | 4 | 100 |
| | Mail-Out | 38 | 18 | 39 | N.A. | 4 | 1 | 100 |
| | | | | | | | | |
| Total Disabled | Metro Toronto | 17 | 24 | 26 | 10 | 20 | 3 | 100 |
| | Other Cities | 11 | 35 | 20 | N.A. | 23 | 11 | 100 |
| | Mail Out | 35 | 22 | 29 | N.A. | 12 | 2 | 100 |
| | | | | | | | | |

Again, it is mentioned that the Metro Toronto and Other Cities survey respondents were assigned to user groups based on survey responses, rather than directly responding to a particular set of questions.

TRANSPORTATION OPTIONS RELATED TO USER GROUP

| <u>TRANSPORTATION OPTIONS</u> | <u>USER GROUP</u> | | | |
|--|--|--|---|---|
| | Those who cannot use public transportation, must use a special vehicle | Those who cannot use public transportation, but can drive or be driven | Those who can use public transportation with difficulty | Those who can use public transportation with no difficulty ¹ |
| IMPROVEMENTS TO EXISTING SYSTEM | | | | |
| 1. TRAINING PROGRAM | | | | |
| a) for physically handicapped | | | X | |
| b) better promoting | | | X | |
| c) for public transportation personnel | | | X | |
| d) for taxi drivers | | X | X | |
| 2. MINOR OPERATIONAL CHANGES | | | | |
| a) new fixed routes | | | X | |
| b) more bus shelters | | | X | |
| c) assist personnel | | | X | |
| d) interior vehicle changes | | X | X | |
| e) better information systems | | | X | |
| f) shorten walking distances | | | X | |
| 3. MAJOR OPERATIONAL CHANGES | | | | |
| a) new vehicles with lower steps | | X | X | |
| b) wheelchair loading devices | X ² | X | X | |
| c) escalators at all subways | | X | X | |
| d) elevators at all subways | X | X | X | |
| 4. USE OF OFF-PEAK EXTRA BUSES AND DIAL-A-BUSES | | | | |
| | | | X | |
| NEW TRANSPORTATION SERVICES | | | | |
| 1. TAXI-TYPE SERVICE | | XY ³ | X | |
| 2. DOOR TO DOOR SPECIAL VAN SERVICE | X | | | |
| 3. EXPANDED DOOR TO DOOR SERVICE | XY | XY | X | |
| PROVISION OF DIRECT SUBSIDIES | | | | |
| 1. SUBSIDIZE FARES THROUGH OPERATORS | X | X | X | |
| 2. SUBSIDIZE FARES THROUGH INDIVIDUALS | X | X | X | |
| 3. SUBSIDIZE FARES THROUGH ORGANIZATIONS | X | X | X | |
| 4. SUBSIDIZE PURCHASE OF ADAPTED AUTOMOBILES | X | X | X | |

1. Since these people have no transportation problems, transportation options are not developed particularly for this group.
2. X denotes the transportation improvement that can benefit the user group specified
3. Y denotes alternative options of new transportation services that are limited to those who cannot use public transportation.

User Group Market Share

The results of each survey have been tabulated by market share of each mode of transportation, shown in Exhibit VI-3.

This exhibit shows the dominant modes for each user group - taxi, auto passenger, and special vehicle for the most severely disabled, and greater use of public transit and auto as driver for the less severely disabled.

The survey results also show that disabled people do not fit neatly into transportation limitation categories. For example, those who responded in the mail-out survey that they must use a special vehicle also travelled by bus, taxi, and auto. Some of these people probably referred to a special taxi service (such as for schoolchildren) or specially adapted cars as "special vehicles", while others put themselves in this category simply because they preferred to travel by special vehicle. In the Metro Toronto and other cities' surveys, many people who travel by special vehicle also use other transportation modes.

DEFINITION OF FUTURE TRANSPORTATION OPTIONS

A list has been compiled consisting of possible new and improved services for each disabled user group. These transportation options are related on Exhibit VI-4 to the three user groups with transportation problems, and are further spelled out below:

A. Improvements to Existing Services

1. Training Programs:

- (a) Institute training program designed to help physically handicapped use existing public transportation and taxi systems.
- (b) Program to market existing public transportation system for the disabled.
- (c) Train public transportation personnel in aiding and serving the physically handicapped.
- (d) Train taxi drivers (perhaps designated taxi company fleets) on how to handle physically handicapped passengers (not always feasible in larger cities where taxi fleets are less stable).

2. Minor Operational Changes in Public Transportation Systems:

- (a) Designate new fixed route service (possibly in off-peak) for physically handicapped. This could be accomplished by denoting all concentrations of physically handicapped, and providing doorstep transit service to the establishment, rather than within the 1,000 feet usually specified as a transit catchment area.
- (b) Provide more bus shelters, and possibly consider heating shelters (as some physically handicapped are quite susceptible to changes in temperature due to poor circulation). This improvement, as others, would mean an improved system not just for the physically handicapped, but for the population as a whole. As such, the costs of such a program could not be totally attributable to an improvement for the physically handicapped.
- (c) Provide physical assist personnel to help the physically handicapped both in information transfer and in boarding and exiting vehicles. This could only be implemented in areas where a large concentration of potential physically handicapped passengers would gather, such as

near sheltered workshops. In other cases, the transit operator himself would have to assist disabled people in boarding. Changes of this type have implications in existing labour agreements.

- (d) Provide minor interior vehicle changes and station changes, such as improved seating (possibly some designated seats for the physically handicapped), and extra handrails.
 - (e) Provide better information systems to overcome the uncertainty many physically handicapped and elderly experience in the use of the public transportation system. (This improvement may be a duplication of the improvement mentioned in Option 1(b), but is included in this section because it was included in the minor operational improvement section of the survey).
 - (f) Shorten walking distances at bus or subway stations (such as providing designated reserved parking at subway stations).
3. Major Operational Changes in Public Transportation Systems:
- (a) New vehicle design to provide lower steps at vehicle entry and exit points.
 - (b) New vehicle design or modifications to existing vehicles to provide wheelchair access.
 - (c) Provision of escalators at all subway stations.
 - (d) Provision of elevators at all subway stations.
4. Use of Off-Peak Extra Buses and Dial-a-Buses for Group Trips.

B. Provision of New Transportation Services

- 1. Establish new taxi-like fleet or contract out to existing taxi companies a door-to-door taxi service for the physically handicapped:
 - (a) Peak-hour service.
 - (b) Off-peak hour service.
 - (c) All-day service.

2. Establish a door-to-door pre-booked or demand-responsive service, using 5-13 passenger converted vans essentially for the disabled in wheelchairs and their companions:
 - (a) Peak-hour service.
 - (b) Off-peak hour service.
 - (c) All-day service.

3. Establish a door-to-door pre-booked or demand-responsive service using 5-13 passenger converted vans and possibly a few larger vehicles (e.g. a minibus vehicle which normally accommodates 15-25 persons, but when modified to allow wheelchair entry, could accommodate 12-15 persons). This service would be for both wheelchair-bound and walking handicapped and their companions, and could be restricted to those who cannot use public transit, or include those who can use it with difficulty:
 - (a) Peak-hour service.
 - (b) Off-peak hour service.
 - (c) All-day service.

C. Direct Subsidization to Defray Costs of Existing and Future Services

1. Subsidize fare levels through existing operators:
 - (a) Taxi fares.
 - (b) Special vehicle fare.

2. Payment of increased transportation funds directly to physically handicapped individuals.

3. Payment of transportation funds to organizations representing the physically handicapped for the provision of transportation services:
 - (a) Non-profit organizations representing handicapped individuals, such as CNIB, Canadian Hearing Society, etc.
 - (b) Non-profit organizations which are chiefly identified with raising funds for organizations, such as the United Appeal.

REVIEW ... REGARDING IMPROVEMENTS TO EXISTING SYSTEMS

12(a) Which of the following improvements in service would be most important to make it easier for you to travel? (MARK CARD H) ARE THERE ANY OTHERS?

| | FIRST MENTION | OTHER MENTIONS |
|--|--------------------------|--------------------------|
| 1. REDUCED RATES FOR SPECIAL EQUIPMENT (LINE HAND CONTROLS) IN AUTOMOBILES | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. NO SPECIAL IMPROVEMENT IS NECESSARY | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. IMPROVEMENTS IN THE BUS SYSTEM | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. IMPROVEMENTS IN THE SUBWAY SYSTEM | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. A LOWER COST DOOR-TO-DOOR SERVICE WITH SPECIALLY DESIGNED VEHICLES | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. LOWER TAXI FARES | <input type="checkbox"/> | <input type="checkbox"/> |

(b) IF #5 OR #6 SELECTED ASK THE FOLLOWING:

If the service that you felt was most important were available at a fare of \$1.30 per trip, how many additional trips per week would you take for the following purposes? (WRITE IN FIGURE)

| | GO TO Q. 12(d) | GO TO Q. 12(b), 12(c) 12(d) |
|--------------------------------|--------------------------|-----------------------------|
| Work | <input type="checkbox"/> | <input type="checkbox"/> |
| Education | <input type="checkbox"/> | <input type="checkbox"/> |
| Shopping and Personal Business | <input type="checkbox"/> | <input type="checkbox"/> |
| Leisure and Recreation | <input type="checkbox"/> | <input type="checkbox"/> |
| Health Care | <input type="checkbox"/> | <input type="checkbox"/> |

(c) IF #5 OR #6 SELECTED ASK THE FOLLOWING:

If the service that you felt was most important were available at a fare of \$2.00 per trip, how many additional trips per week would you take for the following purposes? (WRITE IN FIGURE)

| | |
|--------------------------------|--------------------------|
| Work | <input type="checkbox"/> |
| Education | <input type="checkbox"/> |
| Shopping and Personal Business | <input type="checkbox"/> |
| Leisure and Recreation | <input type="checkbox"/> |
| Health Care | <input type="checkbox"/> |

CARD B (Key punch Only)

(d) IF #3 OR #4 SELECTED ASK THE FOLLOWING:

If the service that you felt was most important were available at the present fare, how many additional trips per week would you take for what purposes? (WRITE IN FIGURE)

| | |
|--------------------------------|--------------------------|
| Work | <input type="checkbox"/> |
| Education | <input type="checkbox"/> |
| Shopping and Personal Business | <input type="checkbox"/> |
| Leisure and Recreation | <input type="checkbox"/> |
| Health Care | <input type="checkbox"/> |

14(a) There are a number of ways of improving the bus, streetcar, and the subway systems. As I read this list, please tell me whether you feel each is Very Important, Somewhat Important, or Not at All Important to you.

| | Very Important | Somewhat Important | Not At All Important |
|--|--------------------------|--------------------------|--------------------------|
| 1. Better information about the public transportation system and the stops and schedules | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Special seats on buses and subways for physically handicapped | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Hand rails at entrances and exits of buses | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. More vertical grab-bars in buses and subways | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. More shelters | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. More seats at bus stops | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

(b) If these improvements were made, how many additional trips would you make per week by subway and bus? (WRITE IN FIGURE)

Please tell me again whether you feel each of the following items is Very Important, Somewhat Important, or Not at All Important to you.

| | Very Important | Somewhat Important | Not At All Important |
|---|--------------------------|--------------------------|--------------------------|
| 1. Lower steps on buses | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Loading device for wheelchairs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Up-escalators at all subway stations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Down-escalators at all subway stations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Elevators at all subway stations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

If these improvements were made, how many additional trips would you make per week by subway and bus? (WRITE IN FIGURE)

(e) Do you have any other suggestions for improvements that might be made to the bus or subway?

- (c) Governmental agencies serving the physically handicapped, such as the Ministry of Community and Social Services, Health and Education.
4. Cost-sharing with physically handicapped individuals for driver training, auto purchase, and the provision of hand controls or other devices making it possible for the physically handicapped to drive their own vehicles.

Future Trip Rates

On both the Metro Toronto and other cities' surveys, questions dealing with future trip behaviour were asked. These questions, shown in Exhibit VI-5, first prompted the respondent to select a transportation option which best applied, and then asked the respondent to estimate future trip behaviour (by trip purpose for all new service options) at various fare levels. The questions referred to the number of additional trips that would be taken under the following circumstances:

A. Improvements to Existing Systems

- "improvements in the bus system" - 12(a) and 12(d)
- "improvements in the subway system" - 12(a) and 12(d)
- improvements that the respondent felt important among the following: "better information systems, special seats for the handicapped, handrails, vertical grab-bars, and shelters and seats at bus stops" (termed here as minor operational changes - 14(a) and 14(b)
- improvements that the respondent felt important among the following: "lower steps on buses, loading device for wheelchairs, subway elevators and escalators" (termed here as major operational changes) - 14(c) and 14(d).

PRESENT AND FUTURE TRIP RATES FOR TRANSPORTATION OPTIONS BY USER GROUP

| User Group | Present and Future Trip Rate | NEW TRANSPORTATION SERVICES | | | | | | IMPROVEMENTS TO EXISTING TRANSIT | | | | | | | |
|--|------------------------------|--------------------------------------|-----------------------------|--------------------------------------|-----------------------------|--------------------------------|-----------------------------|----------------------------------|--------------|-------------------------------|--------------|--|-------------------|--|-------------------|
| | | Door-to-Door Service With Small Vans | | Taxi-Type Service (Lower Taxi Fares) | | Expanded Door-to-Door Services | | Improvements To Bus System | | Improvements To Subway System | | Minor Operational Changes in Public Transportation | | Major Operational Changes in Public Transportation | |
| | | Metro Toronto @ 30c @ \$2.00 | Other Cities @ 30c @ \$2.00 | Metro Toronto @ 30c @ \$2.00 | Other Cities @ 30c @ \$2.00 | Metro Toronto @ 30c @ \$2.00 | Other Cities @ 30c @ \$2.00 | Metro Toronto | Other Cities | Metro Toronto | Other Cities | Metro Toronto | Other Cities | Metro Toronto | Other Cities |
| Use special ¹ vehicle | Present trip rate | 1.11 | 0.81 | 1.11 | 0.81 | 1.11 | 0.81 | 1.11 | 0.81 | | | | | | |
| | % Gain | 31 | 36 | 10 | 11 | 31 | 36 | 10 | 11 | | | | | | |
| | Future trip rate | 1.45 | 1.10 | 1.28 | 0.90 | 1.45 | 1.28 | 1.10 | 0.90 | | | | | | |
| Cannot use public transportation, but do not use special vehicle | Present trip rate | | | | | 1.02 | 0.85 | 1.02 | 0.85 | 1.02 | 0.85 | | | | |
| | % Gain | | | | | 32 ⁽²⁾ | 15 | 32 ⁽²⁾ | 9 | 34 | 15 | | | | |
| | Future trip rate | | | 1.35 | 1.11 | 1.35 | 0.98 | 1.11 | 1.15 | 0.98 | | | | | |
| Can use public transportation with difficulty | Present trip rate | | | 1.21 | 1.01 | 1.21 | 1.01 | 1.21 | 1.01 | 1.21 | 1.01 | | | | |
| | % Gain | | | 32 | 34 | 32 | 15 | 32 | 9 | 34 | 15 | | | | |
| | Future trip rate | | | 1.60 | 1.34 | 1.60 | 1.16 | 1.60 | 1.34 | 1.34 | 1.16 | | | | |
| Total Disabled | Present trip rate | | | | | | | | | | | 1.16 | 0.94 | 1.16 | 0.94 |
| | % Gain | | | | | | | | | | | 12 ⁽³⁾ | 11 ⁽³⁾ | 8 ⁽³⁾ | 14 ⁽³⁾ |
| | Future trip rate | | | | | | | | | | | 1.30 | 1.04 | 1.23 | 1.07 |

Notes: 1. The more precise user group identification wording for Metro Toronto and other cities' surveys is used here.

2. For the transportation options consisting of taxi-type service and expanded door-to-door service, the user groups "Cannot use Public Transportation, but do not use Special Vehicle", and "Can use Public Transportation with Difficulty" were combined. Thus, the percent gain for each user group is equal within the same option.

3. For the transportation options "Improvements to Bus System", "Improvements to Subway System", "Minor Operational Changes in Public Transportation", and "Major Operational Changes in Public Transportation" all four user groups (including "no difficulty") have been combined for the purposes of analysis.

B. New Transportation Services

- "a lower cost door-to-door service with specially designed vehicles" at fare levels of 30¢ and \$2.00 - 12(a), 12(b), 12(c)
- "lower taxi fares" at 30¢ and \$2.00 fare levels - 12(a), 12(b), 12(c).

The present and future trip rates for each of the transportation options specified in the questionnaire are shown in Exhibit VI-6. Each option is roughly parallel to the transportation options listed in Exhibit VI-4. The blank spaces in the tables represent groups for whom the options are not directly intended. The main observations on the results of this exhibit are:

1. There is about a 3 to 1 ratio of future trip increases indicated for the 30¢ fare, as opposed to the \$2.00 fare for the new service options.
2. There is a significantly lower trip increase projection (6% to 19%) for public transit improvements even for "major" improvements.
3. There is some increase in trips projected for "major" as opposed to "minor" improvements in public transit but the difference is possibly less than might be expected.
4. The lowest relative increase projected was for subway improvements.

Future Market Share

Future market share has been determined, using survey responses to future trip behaviour questions. The assumption has been made that any future trips projected by the respondent due to the introduction of

EXHIBIT VI-7

FUTURE MARKET SHARE BY TRANSPORTATION OPTION AND USER GROUP

| User Group | NEW TRANSPORTATION SERVICES | | | | | | | | | | IMPROVEMENTS TO EXISTING TRANSIT | | | | | | | | |
|---|--------------------------------------|--------------------|------------------------|--------------------------------------|--------------------|-----------------------|-------------------------------|------------------------|--------------------|-----------------------|----------------------------------|--------------|-----------------------------------|--------------|---|--------------|---|--------------|------|
| | Door-to-Door Service With Small Vans | | | Taxi-Type Service (Lower Taxi Fares) | | | Expanded Door-to-Door Service | | | | Improvements to the Bus System | | Improvements to the Subway System | | Minor Operational Changes in Public Transit | | Major Operational Changes in Public Transit | | |
| | Metro Toronto @ 30¢ | Other Cities @ 30¢ | Metro Toronto @ \$2.00 | Metro Toronto @ \$2.00 | Other Cities @ 30¢ | Other Cities @ \$2.00 | Metro Toronto @ 30¢ | Metro Toronto @ \$2.00 | Other Cities @ 30¢ | Other Cities @ \$2.00 | Metro Toronto | Other Cities | Metro Toronto | Other Cities | Metro Toronto | Other Cities | Metro Toronto | Other Cities | |
| Use special vehicle | 5 | 6 | 1 | 2 | 15 | 18 | 21 | 25 | 6 | 7 | 7 | 8 | 5 | 2 | 6 | 7 | 8 | (1) | (1) |
| auto driver | 15 | 18 | 21 | 25 | 15 | 18 | 21 | 25 | 6 | 7 | 7 | 8 | 5 | 2 | 6 | 7 | 8 | | |
| bus | 6 | 7 | 13 | 16 | 6 | 7 | 13 | 16 | 1 | 2 | 2 | 3 | 18 | 26 | 19 | 36 | 41 | | |
| subway | - | - | - | - | - | - | - | - | 1 | 2 | 2 | 3 | - | n.a. | 8 | 18 | 17 | | |
| taxi | 26 | 31 | 10 | 12 | 26 | 31 | 10 | 12 | n.a. | n.a. | n.a. | n.a. | - | n.a. | 5 | 4 | n.a. | | |
| special vehicle | 48 | 38 | 55 | 45 | 48 | 38 | 55 | 45 | 54 | 45 | 46 | 35 | 27 | 34 | 30 | 28 | 34 | | |
| Total: | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | | |
| Cannot use public transportation but do not use special vehicle | 5 | 6 | 1 | 2 | 15 | 18 | 21 | 25 | 6 | 7 | 7 | 8 | 5 | 2 | 6 | 7 | 8 | | |
| auto driver | 29 | 35 | 33 | 40 | 14 | 17 | 6 | 7 | 4 | 5 | 5 | n.a. | 4 | n.a. | 7 | 8 | 41 | | |
| auto passenger | 14 | 17 | 6 | 7 | 4 | 5 | n.a. | n.a. | 4 | 5 | 4 | n.a. | 4 | n.a. | 4 | 4 | 17 | | |
| bus | 46 | 35 | 54 | 45 | 46 | 35 | 54 | 45 | 1 | 1 | 1 | 1 | 27 | 34 | 28 | 34 | n.a. | | |
| subway | 1 | 1 | - | - | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | | |
| taxi | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | | |
| special vehicle | | | | | | | | | | | | | | | | | | | |
| Total: | | | | | | | | | | | | | | | | | | | |
| Can use public transportation with difficulty | 17 | 21 | 3 | 4 | 17 | 21 | 3 | 4 | 17 | 21 | 21 | 21 | 23 | 4 | 22 | 22 | 4 | | |
| auto driver | 20 | 24 | 34 | 41 | 20 | 25 | 34 | 39 | 3 | 4 | 3 | 4 | 23 | 4 | 22 | 22 | 4 | | |
| auto passenger | 17 | 20 | 19 | 23 | 17 | 20 | 19 | 23 | 19 | 23 | 19 | 23 | 10 | 40 | 26 | 26 | 40 | | |
| bus | 9 | 11 | n.a. | n.a. | 9 | 11 | n.a. | n.a. | 9 | 11 | 9 | 11 | 18 | n.a. | 16 | 16 | n.a. | | |
| subway | 37 | 24 | 40 | 27 | 35 | 23 | 40 | 29 | 2 | 2 | 2 | 2 | 2 | 19 | 15 | 15 | 19 | | |
| taxi | - | - | 4 | 5 | - | - | - | - | 4 | 5 | 4 | 5 | - | 5 | - | - | 5 | | |
| special vehicle | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | | |
| Total: | | | | | | | | | | | | | | | | | | | |
| Total Disabled | 15 | 10 | 15 | 10 | 15 | 10 | 15 | 10 | 15 | 10 | 15 | 10 | 15 | 10 | 15 | 10 | 15 | 10 | |
| auto driver | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 23 | 31 | 14 | 9 |
| auto passenger | 30 | 29 | 30 | 29 | 30 | 29 | 30 | 29 | 30 | 29 | 30 | 29 | 30 | 29 | 30 | 30 | 29 | 23 | 24 |
| bus | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 25 |
| subway | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 39 |
| taxi | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | n.a. |
| special vehicle | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 19 |
| Total: | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 8 |
| | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

1. Market shares for the transportation option 'Major Operational Changes in the Public Transportation System' were calculated for all three user groups combined.

a new service (or an improved level of an existing service) would be carried by that new or improved service. Therefore, the market share of the mode of the new or improved service will increase accordingly. The future market shares calculated are shown in Exhibit VI-7, based on the projected trip increases shown in Exhibit VI-6.

Exhibit VI-7 can be compared with Exhibit VI-3 - which shows the existing market share of each mode. As an example of the change in market share, it was calculated that the introduction of door-to-door small van service at 30¢ would increase the market share for special vehicles from 31% to 47% (Metro Toronto) and 36% to 53% (other cities).

DEMAND ESTIMATES FOR TRANSPORTATION OPTIONS

This section of the chapter details the methodology used to calculate preliminary demand estimates for each of the proposed transportation options.

Present and future trip rates were presented in Exhibit VI-6 for each user group and transportation option combination. For some transportation options trip rates have been developed at two different future fare levels, to obtain some measure of price sensitivity.

As a result of the introduction of each transportation option at different fare levels, it is assumed that all existing and additional trips in that mode would be served by the new transportation option. Estimates of the future market share are detailed in Exhibit VI-7. When

EXHIBIT VI-8

DEMAND ESTIMATES FOR IMPROVEMENTS TO EXISTING SERVICES

| TRANSPORTATION OPTION | USER GROUP | GEOGRAPHIC AREA | PHYSICALLY HANDICAPPED POPULATION SERVED (1) (000) | EXISTING DAILY TRANSIT TRIPS (000) | FUTURE DAILY TRANSIT TRIPS (000) | % INCREASE IN TRANSIT TRIPS (NOT TOTAL TRIPS) | EXISTING ANNUAL TRIPS BY PHYSICALLY HANDICAPPED PERSON | FUTURE ANNUAL TRIPS BY PHYSICALLY HANDICAPPED PERSON |
|--|--|------------------------|---|---------------------------------------|-------------------------------------|---|--|--|
| "Improvements To Bus System" | All Physically Handicapped who either cannot use public transportation or who use it now (2) with difficulty | Total Surveyed Cities: | | | | | | |
| | | Other Cities Toronto | 13.4 ⁽³⁾ 65.3 ⁽⁴⁾ 32.7 ⁽⁴⁾ | 2.3 14.5 6.5 | 3.8 32.5 13.0 | 60 124 117 | 49 67 59 | 78 149 128 |
| | Physically Handicapped who now use public transportation with <u>no</u> difficulty | Other Cities Toronto | 7.5 ⁽³⁾ 62.9 ⁽⁴⁾ 15.8 ⁽⁴⁾ | 2.6 35.0 8.8 | 3.6 47.8 12.0 | 38 36 36 | 104 167 167 | 144 228 228 |
| Improvements To Subway System" | All Physically Handicapped who either cannot use public transportation or who use it now (1) with difficulty | Toronto | 65.3 ⁽³⁾ 32.7 ⁽⁴⁾ | 6.4 2.5 | 10.3 4.4 | 60 77 | 30 23 | 47 40 |
| | Physically Handicapped who now use public transportation with <u>no</u> difficulty | Toronto | 62.9 ⁽³⁾ 15.8 ⁽⁴⁾ | 17.1 4.3 | 21.7 5.5 | 27 27 | 82 82 | 104 104 |
| Minor Operational Changes In Public Transportation | All Physically Handicapped who either cannot use public transportation or who use it now (1) with difficulty | Other Cities Toronto | 13.4 65.3 ⁽³⁾ 32.7 ⁽⁴⁾ | 2.3 21.0 8.9 | 2.5 22.1 9.2 | 7 5 3 | 49 96 82 | 52 101 84 |
| | Physically Handicapped who now use public transportation with <u>no</u> difficulty | Other Cities Toronto | 7.5 ⁽³⁾ 62.9 ⁽⁴⁾ 15.8 ⁽⁴⁾ | 2.6 52.2 13.1 | 2.7 54.0 13.7 | 6 4 4 | 104 249 249 | 111 258 260 |
| Major Operational Changes In Public Transportation | All Physically Handicapped who either cannot use public transportation or who use it now (1) with difficulty | Other Cities Toronto | 13.4 65.3 ⁽³⁾ 32.7 ⁽⁴⁾ | 2.3 21.0 8.9 | 2.7 23.8 9.9 | 16 13 11 | 49 96 82 | 56 109 91 |
| | Physically Handicapped who now use public transportation with <u>no</u> difficulty | Other Cities Toronto | 7.5 62.9 15.8 | 2.6 52.1 13.1 | 3.0 58.3 14.9 | 15 12 13 | 104 249 249 | 120 278 281 |

1. These figures are slightly at variance with the final tally of handicapped people in each severity group shown in Exhibit II-1.
2. This combination of user groups include the following: "Those who cannot use public transportation, must use special vehicle", "Those who cannot use public transportation, but can be driven", and "Those who use public transportation with difficulty".
3. This population estimate uses the revised Metro Toronto estimates referred to in Exhibit II-1.
4. This population estimate refers to the original lower estimates of Metro Toronto as per Exhibit II-1.

these market share percentages are applied to the number of daily trips by user group described above, estimates of the future total daily trips by each new option are obtained. These figures become the preliminary demand estimates for cost analysis.

Improvements to
Existing Systems

Exhibit VI-8 shows the summary demand estimates for the transportation options which involve improvements in the existing public transit system. This exhibit shows the number of physically handicapped persons affected by each option, the existing and future daily trip estimates, and existing and future annual trips by person. A 300-day year is used to be consistent with normal transit analysis. It should be noted that the percent increase is the increase in trips in public transit and not increase over the total trips for all modes as portrayed in Exhibit VI-6.

It should be noted again that the four separate questions (shown in Exhibit VI-5) differ in the method in which they were asked and therefore the results for each question will differ in the validity which they should be interpreted.

Exhibit VI-8 shows that the projected future daily trips vary according to transportation (and survey question), user group, and survey. These variations are discussed below.

Variation by
Transportation Option

The greatest increases in daily trips occur for the transportation option "Improvements to Bus System". This can possibly be explained by the ambiguity of this option which could have meant to Metro Toronto respondents some kind of special bus service. When the respondents were asked how many additional trips would be taken if specific changes they had considered important (from a list presented to them) were implemented, much lower increases were recorded. "Major" operational changes had a relatively greater impact than "minor" changes, but the total anticipated increase on an across-the-board basis was relatively low.

Variation
by User Group

Without exception, the largest increases occur for the disabled who have transportation problems (those who either cannot use public transportation at present, or who use it now with difficulty) as opposed to those who can use the public transit system with no difficulty. This result is to be expected, but it is also significant that improvements in the public transit system will generate increased trips by people who are experiencing no difficulty in using the system at present.

The latter group represents a control group, in effect. In the more vague "improvements to bus/subway system" the handicapped with

transportation difficulties showed a much higher relative expected travel than those experiencing no difficulty. However, when specific improvements were listed, the future trip rates between the two groups was very much the same. This would seem to indicate, when faced with the specific, practical changes, the disabled respondent did not anticipate greatly increased travel by transit.

Variation by Survey
(Metro Toronto vs. Other Cities)

Generally, the increase in future trips is relatively constant between Metro Toronto and other cities. However, one significant exception to this trend occurs for the transportation option "Improvements to Bus System" for the user groups "All Physically Handicapped Who Either Cannot Use Public Transportation or Who Use it Now With Difficulty", where the Metro Toronto increase is twice that for the other cities. One possible explanation for this is a greater general dependence in Toronto on public transit than in other cities, and a correspondingly greater desire by the disabled to use public transit in Toronto.

Comparison of Annual Trips by
 Physically Handicapped Person to
Ontario Passenger Per Capita Data³

Existing data across Ontario indicates that the population as a whole takes about 160 trips per capita per annum by public transportation in Metro Toronto, and between 30-80 trips per capita per annum by public transportation in other urban areas.

3. Supplied by the Ontario Ministry of Transportation and Communications.

DEMAND ESTIMATES FOR NEW TRANSPORTATION SERVICES

| Transportation Option | Geographic Area | Disabled Population Served (000) | Existing Daily Trips (000) | % Increase @ 30¢ Fare | % Increase @ \$2.00 Fare |
|--|-------------------------|----------------------------------|----------------------------|-----------------------|--------------------------|
| 1. Door-to-Door Special Vehicle Service - for Those who Must Use Special Vehicle. | Other Cities Toronto | 1.3 (1) 7.7 (2) 7.7 | .4 2.7 2.7 | 114 97 97 | 39 30 30 |
| 2. Door-to-Door Special Vehicle Service - for All Those who Cannot Use Public Transportation. | Other Cities Toronto | 6.6 (1) 28.2 (2) 19.9 (2) | 2.3 8.9 6.7 | 90 74 71 | 33 23 23 |
| 3. Door-to-Door Special Vehicle Service - for All Those who Cannot Use Public Transportation or Can Only Use It With Difficulty. | Other Cities Toronto | 13.4 65.3 (1) 32.7 (2) | 3.7 16.0 9.1 | 105 132 84 | 39 41 28 |
| 4. Taxi-Type Door-to-Door Service - for All who Can be Driven But Cannot Use Public Transportation. | Other Cities Toronto | 5.3 (1) 20.4 (2) 12.2 | 1.7 6.2 4.0 | 95 102 76 | 34 79 26 |
| 5. Taxi-Type Door-to-Door Service - for All Those who can be Driven, but who Cannot Use Public Transportation, or who can Only Use it with Difficulty. | Other Cities Toronto | 12.2 57.6 (1) 25.0 (2) | 3.2 13.4 6.4 | 119 173 109 | 43 52 42 |

1. Population estimate refers to the revised Metro figures in Exhibit II-1.

2. Population estimate refers to lower estimates of disabled in Metro Toronto in Exhibit II-1.

Peat, Marwick and Partners

The existing travel behaviour evidenced in Exhibit VI-8 shows reasonable results when compared to Ontario per capita trip rates for public transit. The possible exception would be in Metro Toronto for those who now use public transportation with no difficulty, where the existing annual trip by physically handicapped person varies from 160-250 trips per year, or somewhat above the Ontario passenger per capita data. This can be explained by the sample population characteristics of relatively older and poorer people who have a greater dependence on public transportation than the general Toronto population.

This also applies to the Other Cities existing annual trips per physically handicapped person, which for the user group "those who use public transportation with no difficulty" varies from 50-100 trips per year.

New Transportation Services

Exhibit VI-9 shows the existing trips for the transportation options which involve new transportation services. This exhibit shows the number of physically handicapped persons affected by each option, existing daily trip estimates, and percentage increases in the mode of the new service at 30¢ and \$2.00 fares.

For the purposes of analysis, the number of disabled who must use a special vehicle has been separated from the total of those who cannot use public transit. To do this, we used the percentage of people who classified themselves this way in response to the direct question in the mail-out survey (see Exhibit VI-1).

EXHIBIT VI-10

VEHICLE ESTIMATES FOR NEW TRANSPORTATION SERVICES

| | | TRANSPORTATION OPTIONS | | | | |
|------------|----------------------------|--|---|---|---|---|
| | | Door-to-Door Special Van Service @ 30c | Special Van Service Cannot Use P.T. @ 30c | Special Van Service - Cannot Use P.T. Or Use With Difficulty @ 30c | Taxi-Type Service - Cannot Use P.T. @ 30c | Taxi-Type Service Cannot Use P.T. Or Use With Difficulty @ 30c |
| California | People Served ¹ | 120 | 690 | 1,230 | 570 | 1,110 |
| | Daily Demand ² | 76 | 443 | 761 | 353 | 646 |
| | Vehicles Required | 3 | 22 | 40 | 15 | 28 |
| | Vehicle Hours | 40 | 171 | 300 | 114 | 210 |
| | Vehicle Mileage | 800 | 3,010 | 5,200 | 2,280 | 4,200 |
| Kingston | People Served ² | 170 | 900 | 1,885 | 730 | 1,715 |
| | Daily Demand ² | 107 | 578 | 1,160 | 452 | 988 |
| | Vehicles Required | 4 | 29 | 62 | 19 | 43 |
| | Vehicle Hours | 58 | 217 | 444 | 148 | 326 |
| | Vehicle Mileage | 1,160 | 3,760 | 7,640 | 2,960 | 6,520 |
| Leominster | People Served | 100 | 380 | 910 | 280 | 810 |
| | Daily Demand ² | 63 | 248 | 562 | 231 | 463 |
| | Vehicles Required | 2 | 12 | 30 | 7 | 21 |
| | Vehicle Hours | 36 | 94 | 218 | 57 | 154 |
| | Vehicle Mileage | 720 | 1,650 | 3,760 | 1,150 | 3,080 |
| Mandor | People Served | 600 | 2,900 | 6,200 | 2,300 | 5,600 |
| | Daily Demand ² | 375 | 1,849 | 3,820 | 1,426 | 3,200 |
| | Vehicles Required | 12 | 92 | 200 | 59 | 138 |
| | Vehicle Hours | 160 | 694 | 1,455 | 8,960 | 24,430 |
| | Vehicle Mileage | | | | | |
| Under Bay | People Served | 280 | 1,730 | 3,220 | 1,450 | 2,940 |
| | Daily Demand ² | 174 | 1,103 | 1,980 | 899 | 1,710 |
| | Vehicles Required | 6 | 55 | 105 | 37 | 73 |
| | Vehicle Hours | 80 | 422 | 770 | 284 | 544 |
| | Vehicle Mileage | 1,600 | 7,350 | 13,300 | 5,680 | 10,880 |
| Ontario | People Served | 7,690 | 28,180 | 65,310 | 20,490 | 57,620 |
| | Daily Demand ² | 5,270 | 20,813 | 44,520 | 12,479 | 36,450 |
| | Vehicles Required | 260 | 904 | 1,370 | 646 | 1,230 |
| | Vehicle Hours | 2,650 | 8,640 | 18,360 | 5,350 | 14,980 |
| | Vehicle Mileage | 47,800 | 154,720 | 339,900 | 94,080 | 275,200 |
| Ontario | People Served | 7,690 | 19,870 | 32,710 | 12,180 | 25,020 |
| | Daily Demand | 5,270 | 13,526 | 17,300 | 7,059 | 10,840 |
| | Vehicles Required | 260 | 680 | 1,112 | 384 | 741 |
| | Vehicle Hours | 2,650 | 5,593 | 7,148 | 3,036 | 4,644 |
| | Vehicle Mileage | 47,800 | 98,270 | 126,120 | 53,040 | 81,420 |

See Exhibit II-1 for exact population estimates reported. There is some very small (and insignificant) variance from these figures due to adjustments made to them as a result of late returns from survey.

Daily demand includes existing plus additional trips if the service is to be provided.

This population estimate refers to the revised Metro figure.

This population estimate refers to the lower Metro estimate.

In all cases, Exhibit VI-9 shows that the proposed fare has a significant impact on future trips, as all 30¢ options have a greater increase than \$2.00 options.

Vehicle Estimates for
New Transportation Services

Exhibit VI-10 shows estimates for existing and additional demand combined for all new transportation services for each urban area surveyed. This exhibit shows the number of physically handicapped persons affected by each option, the future daily demand estimates, vehicles required, vehicle hours, and mileage. The number of vehicles required varies from 1,230 taxi-type vehicles (door-to-door taxi service for all those who cannot use public transit or have some difficulty with it at 30¢ in Metro Toronto) to two special vehicles in Timmins to serve those who need a special vehicle.

The vehicle requirements, hours, and mileage are calculated in two categories: pre-booked (work and education) and demand-responsive (all other trip purposes). Since the pre-booked trips tend to occur at the same time, the vehicle requirements are higher and thus dictate the total number of vehicles which are required.

In order to calculate the vehicle requirements, various assumptions about vehicle loading, hours of service, and period of service had to be made. These assumptions are listed below, and are based on discussions with operators and users of existing services.

Hours of Service

- work and education: 4 hours per day (7 - 9 a.m., 4 - 6 p.m.)
- all other trip purposes: 14 hours per day (all other than peak from 6 a.m. to 12 p.m.)
- all day: 18 hours per day (i.e. sum of peak and off-peak service).

Vehicle Capacity (Maximum)

- taxi: 3 passengers per vehicle
- special vehicles:⁴
 - small van: 7 passengers per vehicle
 - converted dial-a-bus: 15 passengers per vehicle.

Circuit Time (Per Vehicle Trip in Minutes)⁵

| <u>Type of Service</u> | <u>Metro Toronto</u> | <u>Other Cities</u> |
|---------------------------------------|----------------------|---------------------|
| Work and Education Trips - Taxi | 75 | 60 |
| All Other Trip Purposes - Taxi | 45 | 30 |
| All Day - Taxi | 60 | 45 |
| Work and Education Trips - Small Van | 90 | 75 |
| All Other Trip Purposes - Small Van | 60 | 45 |
| All Day - Small Van | 75 | 60 |
| Work and Education Trips - Dial-a-Bus | 90 | 75 |
| All Other Trip Purposes - Dial-a-Bus | 60 | 45 |
| All Day - Dial-a-Bus | 75 | 60 |

-
4. The dial-a-bus is a larger type of special vehicle that can accommodate wheelchairs, but is not used in estimating vehicle requirements or costs.
 5. Discussions with operators of various services have shown that these estimates are reasonable. For costing purposes, we are using these average levels of service. It would be appropriate in relation to a specific service proposal in a particular city, to test the effects of lower and higher levels of service.

Vehicle Loading (Average Number
of Passengers Per Vehicle Per Cycle)

| <u>Type of Service</u> | <u>Metro Toronto</u> | <u>Other Cities</u> |
|---------------------------------------|----------------------|---------------------|
| Work and Education Trips - Taxi | 2.5 | 2.5 |
| All Other Trip Purposes - Taxi | 2.0 | 2.0 |
| All Day - Taxi | 2.0 | 2.0 |
| Work and Education Trips - Small Van | 3.0 | 3.0 |
| All Other Trip Purposes - Small Van | 2.0 | 2.0 |
| All Day - Small Van | 2.5 | 2.5 |
| Work and Education Trips - Dial-a-Bus | 3.5 | 3.5 |
| All Other Trip Purposes - Dial-a-Bus | 2.5 | 2.5 |
| All Day - Dial-a-Bus | 3.0 | 3.0 |

Average Speed
(Miles Per Hour)

| <u>Type of Service</u> | <u>Metro Toronto</u> | <u>Other Cities</u> |
|---------------------------------------|----------------------|---------------------|
| Work and Education Trips - Taxi | 15 | 20 |
| All Other Trip Purposes - Taxi | 20 | 20 |
| All Day - Taxi | 20 | 20 |
| Work and Education Trips - Small Van | 15 | 20 |
| All Other Trip Purposes - Small Van | 20 | 20 |
| All Day - Small Van | 20 | 20 |
| Work and Education Trips - Dial-a-Bus | 15 | 20 |
| All Other Trip Purposes - Dial-a-Bus | 20 | 20 |
| All Day - Dial-a-Bus | 20 | 20 |

Using the demand estimates and assumptions detailed above, the number of vehicles required, system hours, and system mileage can be calculated. The formulae used in these calculations are listed below:

$$\begin{aligned} \text{Number of Vehicles Required} &= \frac{(\text{Demand}) \times (\text{Circuit Time in Hours})}{(\text{Hours of Service}) \times (\text{Vehicle Loading})} \\ \text{Vehicle Hours of Operation} &= (\text{Hours of Service}) \times (\text{Number of Vehicles Required}) \\ \text{System Mileage} &= (\text{Average Speed}) \times (\text{Vehicle Hours of Operation}) \end{aligned}$$

EXHIBIT VI-11

URBAN ONTARIO DAILY DEMAND ESTIMATES

| | Population Served (000) | Daily Demand @ 30¢ (000) | Estimated Future Annual Trips Per Disabled Person @ 30¢ |
|--|----------------------------|-----------------------------|---|
| <u>NEW TRANSPORTATION SERVICES</u> | | | |
| 1. Door-to-Door Special Vehicle Service - for those who Must Use Special Vehicle. | 15.7 ⁽¹⁾ | 10.4 | 200 |
| | 15.7 ⁽²⁾ | 10.4 | 200 |
| 2. Door-to-Door Special Vehicle Service - for All those who Cannot Use Public Transportation | 71.3 | 44.9 | 190 |
| | 63.0 | 39.7 | 190 |
| 3. Door-to-Door Special Vehicle Service - for All those who Cannot Use Public Transportation or Can Only Use it with Difficulty. | 151.5 | 89.0 | 180 |
| | 118.9 | 70.4 | 180 |
| 4. Taxi-Type Door-to-Door Service for All who Can be Driven but Cannot Use Public Transportation | 55.6 | 34.5 | 190 |
| | 47.3 | 29.3 | 190 |
| 5. Taxi-Type Door-to-Door Service for All Those who Can be Driven but who Cannot Use Public Transportation, or who Can Only Use it with Difficulty | 135.8 | 78.6 | 170 |
| | 103.2 | 60.0 | 170 |
| <u>IMPROVEMENTS TO EXISTING SYSTEMS</u> | | | |
| <u>Improvements to Bus System:</u> | 201,350 ^{(1) (3)} | 50,230 | 70 |
| | 334,700 ^{(1) (4)} | 114,930 | 100 |
| | 168,750 ^{(2) (3)} | 31,710 | 60 |
| | 255,060 ^{(2) (4)} | 60,670 | 70 |
| <u>Improvements to Subway System:</u> | 133,330 | 10,260 | 20 |
| | 231,450 | 31,990 | 40 |
| | 100,730 | 4,400 | 10 |
| | 151,810 | 9,880 | 20 |
| <u>Minor Operational Improvements:</u> | 201,350 | 33,850 | 50 |
| | 334,700 | 100,900 | 90 |
| | 168,750 | 20,940 | 40 |
| | 255,060 | 47,680 | 60 |
| <u>Major Operational Improvements:</u> | 201,350 | 36,570 | 50 |
| | 334,700 | 108,880 | 100 |
| | 168,750 | 22,660 | 40 |
| | 255,060 | 51,550 | 60 |

1. Provincial estimates include revised Metro Toronto estimates.
2. Provincial estimates include lower Metro Toronto estimates.
3. Contains only user groups who "Cannot use Public Transportation, Must Use Special Vehicle", "Those who Cannot use Public Transportation, but Can be Driven", and "Those who Presently Use Public Transportation, but Can be Driven".
4. Includes all physically handicapped, even those who have no difficulty with p.t.

URBAN ONTARIO DEMAND ESTIMATES
FOR TRANSPORTATION OPTIONS

The demand estimates produced in Exhibits VI-8 and VI-9 represent daily demands for each of a selected list of municipalities. When these demand estimates are applied to the entire Ontario disabled urban population, the annual demand estimates can be calculated. This is shown in Exhibit VI-11. The population used for estimating demand for new transportation services was the entire urban (cities over 10,000) disabled population (i.e. 5.4 million); the population used for estimating demand for improvements to existing services was the population of Ontario cities with public transportation services (i.e. 4.6 million).

The exhibit also shows the population served and the estimated annual trips per physically handicapped person for each transportation option. Another way of expressing the figures is that the average physically handicapped person to whom a new service is made available will use it once or twice every three days.

The demand estimates discussed in Exhibit VI-11 indicate the number of trips which each transportation option is estimated to attract. For example, the implementation of door-to-door service in urban Ontario for "all physically handicapped who either cannot use public transportation, or who use it now with difficulty"⁶ would attract an estimated 89,000 passenger trips per day, if offered at a 30¢ fare.

6. Including the user group "Cannot use Public Transportation, Must use Special Vehicle", "Cannot use Public Transportation but Can be Driven", and "Can use Public Transportation with Difficulty".

Eligibility Limitations

Each of the transportation options detailed previously has been oriented toward a defined user group, and it has been assumed that 100% of this market (all who would be expected to use that mode) would take advantage of the service when they travel and when the service is available. The impacts on demand and cost, which would result from possible limitations on patronage, are now estimated. Two types of limitations in eligibility are considered:

1. Limit monthly use for trip purposes other than work and education to ten trips at the 30¢ fare.
2. Limit use for trip purposes other than work and education for those whose family incomes do not exceed \$5,000 per year.

Any other criteria could be applied to limit the number of trips an individual could take, or the number of individuals who are eligible. The limitation of ten trips per month and family incomes of less than \$5,000 are relatively arbitrarily selected. In practice, the province might consider limiting service in other ways, such as to those people who qualify for disability pensions. For any of these alternatives, demand figures and cost implications can be calculated.

Limitations for Trip Purposes other than Work and Education to Ten Monthly Trips

The limitation to a total of ten trips per month for trip purposes other than work and education corresponds to the establishment

of an upper allowable trip rate of 0.33 trips per day for the average patron of the system. For the 30¢ fare option, this would produce a limitation in trips other than work and education, as the daily trip rate is greater than 0.33 daily.

We determined the percentage restraint of demand by examining (a) the number of respondents who said they would either take a special vehicle or would use a taxi-type service, and (b) their projected other than work and education trip rate. The results from the survey were as follows:

RESPONSE - METRO AND OTHER CITIES' SURVEYS

| | Would Take Special Vehicle Service | Would Take a Taxi-Type Service | Trip Rate For Additional Trips that Would be Taken | Other Than Work and Education Trip Rates |
|--|------------------------------------|--------------------------------|--|--|
| 1. Those who use a special vehicle | 33.5% | * | .84 | .53 |
| 2. Those who do not use a special vehicle but cannot take public transit | * | 41% | .64 | .58 |

* Some people in Category 1 said they would use a taxi-type service and some people in Category 2 said they would use a special vehicle service. However, it was assumed that if the two new services were available, people who now use a special van would use the special vehicle service and the others would use a special taxi-type service.

The effect of a ten-trip limitation on other than work and education trips would be to restrict the 33.5% and 41% from making more than .33 trips/day for those purposes. Since they now make some trips

for those purposes on those modes (.16 and .18), and since they anticipate making an additional .53 and .58 trips/day, there would be an overall significant reduction in total trips on the new service if a ten-trip/month restriction were imposed.

In fact, instituting such a restriction has the overall effect of reducing the estimated demand by 23% for the special vehicle trips and 30% for the taxi-type service trips.

Limitation of Service for Trips
Other than Work and Education
to Incomes Less than \$5,000

About 75% of the disabled⁷ who have difficulty using public transportation have annual family incomes below \$5,000. Therefore, a \$5,000 income limitation would have some, but not substantial, effect in reducing demand.

COST ESTIMATES FOR
TRANSPORTATION OPTIONS

Improvements to
Existing Services

Referring back to the transportation options outlined in the beginning of this chapter, and listed in Exhibit VI-4, we elaborate on the programs and describe their cost implications. Each is discussed in turn.

7. Including all user groups, even those who have no difficulty using public transportation.

Training Programs

The first purpose of training programs would be to assist the physically handicapped to use the existing public transit systems through education and possibly training. For example, in Metro Toronto most destinations can be reached by bus, and disabled people could be shown how to avoid the subway. The second purpose would be to educate operators - of buses, streetcars, and subways - on how to assist the physically handicapped.

A training program designed to help the physically handicapped use public transportation and taxis might initially make good use of demonstration vehicles available across the province. Depending on the scope of the program and the number of vehicles used, the costs would vary. The vehicles would be regular transit buses, with modified interiors to provide audio-visual displays and seating arrangements. A lift would be installed to accommodate wheelchairs. Each vehicle thus equipped might cost \$70,000-\$100,000, and require training and maintenance personnel. Advertising the program would entail additional expenses.

Training taxi drivers to assist physically handicapped would require a commitment on the part of a taxi fleet owner. Taxi drivers could be required to participate in such training as part of the requirements for obtaining a licence. The time it would take would be perhaps a one half-day session and a special audio-visual instruction kit could be prepared for this purpose. (This has been done in Montreal through the use of a film shown to taxi drivers.) The preparation of

the instruction material, promoting it to taxi companies, and carrying out the training would incur public costs.

Minor Operational Changes in
Public Transportation System

Most of the services described in this section require only a commitment on the part of public transportation management and personnel. The major cost item in this section is the minor vehicle modifications, for which there is already the Ottawa-Carleton estimate (see Chapter IV). The addition of grab-bars, rearrangement of two vertical stanchions, and placing of designated seat stickers could cost as low as \$50 per bus, as it was the case for Ottawa.

Major Operational Changes in
Public Transportation System

Many of the programs mentioned are not fully attributable to the physically handicapped. This includes the provision of escalators at all subway stations, now a policy of the TTC. The bus step design is being improved as part of the General Motors bus designated for production in 1976.

Costs which are directly related to the physically handicapped would include the installation of loading devices for wheelchairs on some regular buses (estimated by a General Motors subcontractor at \$10,000 per bus⁸) designing a lower step for existing buses (with a

8. If 10% of the total Ontario bus fleet were to be equipped with wheelchair lifts, the average annual costs over a ten-year period (average bus life) would be \$250,000.

large, unknown R & D cost), and inclinators (also with a large, unknown R & D cost).

Elevators at subway stations might be viewed as improvements for the general public, but the primary *raison d'etre* would be to improve access to the disabled. Cost estimates are presently being prepared by the TTC, as noted in Chapter IV. Added to these costs would be changes that would have to be made in the interior of subway cars as well as expenditures required to transport people in wheelchairs to and into the subway stations.

Use of Off-Peak Extra Buses
and Dial-a-Buses for Group Trips

This option requires only changes at the administrative level of public transportation systems, as in most systems there are excess vehicles available in the off-peak period. The only increased costs would be vehicle operation and driver costs at an estimated \$1.00⁹ per mile. The buses that might be used most frequently for this purpose would be those fitted with wheelchair loading devices.

New Transportation Services

Past experience in taxi, small van and dial-a-bus projects has yielded some cost ranges which have been applied to the results of

9. Estimate supplied by the Ministry of Transportation and Communications, Province of Ontario.

SUMMARY OF COSTS FOR NEW TRANSPORTATION SERVICES

SURVEYED POPULATION

| Transportation Option | Geographic Area (Surveyed Cities) | Surveyed Population (000) | Annual Total Cost Without Revenue (\$000,000) | Annual Operating Cost Without Revenue (\$000,000) |
|--|--------------------------------------|----------------------------------|--|--|
| 1. Door-to-Door Special Vehicle - for Those who Must Use Special Vehicle (@ 30¢). | Other Cities Toronto | 1.3 (1) 7.7 (2) 7.7 (2) | 1.5 10.7 10.7 | 1.3 9.1 9.1 |
| 2. Door-to-Door Special Vehicle Service - for All Those who Cannot Use Public Transportation (@ 30¢). | Other Cities Toronto | 6.6 (1) 28.2 (1) 19.9 (2) | 6.5 35.0 22.7 | 5.2 29.8 19.3 |
| 3. Door-to-Door Special Vehicle Service - for All Those who Cannot Use Public Transportation or Can Only Use It With Difficulty (@ 30¢). | Other Cities Toronto | 13.4 (1) 65.3 (1) 32.7 (2) | 12.9 79.9 31.1 | 11.0 67.9 26.4 |
| 4. Taxi-Type Door-to-Door Service - for All who Can be Driven But Cannot Use Public Transportation (@ 30¢). | Other Cities Toronto | 5.3 (1) 20.4 (1) 12.2 (2) | 3.2 16.1 9.1 | 2.7 13.7 7.7 |
| 5. Taxi-Type Door-to-Door Service - for All Those who Can be Driven, but who Cannot Use Public Trans- portation, or who Can Only Use it with Difficulty (@ 30¢). | Other Cities Toronto | 12.2 (1) 57.6 (2) 25.0 (2) | 6.7 44.9 13.9 | 5.7 38.2 11.8 |

1. Includes incidence level estimate for physically handicapped in Toronto.

2. Includes actual count of physically handicapped in Toronto.

URBAN PROVINCIAL COST ESTIMATES FOR UNLIMITED SERVICES

| Transportation Option | Disabled Urban Ontario Population (000) | Annual Costs (\$000,000) |
|--|--|--|
| 1. Door-to-Door Special Vehicle Service - for Those who Must Use Special Vehicle. | 15.7 ⁽¹⁾ 15.7 ⁽²⁾ | 20.4 ⁽¹⁾ 20.4 ⁽²⁾ |
| 2. Door-to-Door Special Vehicle Service - for All Those who Cannot Use Public Transportation. | 71.3 63.0 | 77.3 ⁽¹⁾ 64.9 ⁽²⁾ |
| 3. Door-to-Door Special Vehicle Service - for All Those who Cannot Use Public Transportation or Can Only Use It With Difficulty. | 151.5 118.9 | 157.5 ⁽¹⁾ 111.8 ⁽²⁾ |
| 4. Taxi-Type Door-to-Door Service - for All who Can Be Driven But Cannot Use Public Transportation. | 55.6 47.3 | 36.6 ⁽¹⁾ 29.7 ⁽²⁾ |
| 5. Taxi-Type Door-to-Door Service - for All Those who can be Driven, but who Cannot Use Public Transportation, or who Can Only Use it with Difficulty. | 135.8 103.2 | 87.9 ⁽¹⁾ 57.0 ⁽²⁾ |

1. Includes revised Metro figures.

2. Includes lower estimates for Metro Toronto.

the vehicle hours of operation calculation discussed above. These cost ranges are presented below:

| <u>Type of Service</u> | <u>Cost Range (Per Vehicle Hour of Operation, Including Operating, Capital and Overhead Costs)</u> | <u>Average Cost (Per Vehicle Hour of Operation)</u> |
|------------------------------------|--|---|
| Taxi | \$ 9.00 - \$11.00 | \$10.00 |
| Small Van | 12.00 - 15.00 | 13.50 |
| Dial-a-Bus | 13.00 - 16.00 | 14.50 |
| Operating Cost: 85% of total cost. | | |

Exhibit VI-12 shows a summary of the annual costs for five alternative new services. Daily cost estimates have been expanded to present annual costs (using a multiplier of 300).

Calculated on the basis of the preliminary demand estimates some of the more comprehensive transportation services are quite expensive; for example, the costs have been calculated as \$10 million for a special van service and \$31 million (based on low population estimates) for a door-to-door service for all those who cannot use public transit and those who use it with difficulty for Metro Toronto.

From the costs prepared for Metro Toronto and the other cities, we have extrapolated costs for new services based on demand estimates for all of urban Ontario. Exhibit VI-13 shows total costs for the province for the new service options.

Direct Subsidization

The direct subsidization transportation options listed in Exhibit VI-4 and earlier in this chapter are a series of administrative means to lower the cost to the disabled of the use of existing commercial services. To do this, payments can be made to any of the following groups:

- subsidies, or transportation "coupons", to the disabled
- subsidies to taxi and commercial van operators
- subsidies to organizations serving the handicapped
- loans or grants to individuals for acquiring, converting, and learning how to drive private vehicles.

Subsidies to the Disabled

The cost of directly subsidizing the disabled, through transportation coupons for example, depends on the total amount designated for the program; that is, up to a maximum demand it is constrained only by the funds provided. The amount of money to be provided is a policy issue.

The costs per trip would be roughly equivalent to the new services' projected costs, since the difference between the fare to the disabled user (e.g. 30¢) and the price charged by the operator (e.g. \$6.00-\$8.00 for special van service) would be the same as the costs to a transit operator managing an equivalent service. However, the "subsidies to the disabled" administrative procedure is more flexible if only limited assistance is to be provided, since it would not involve setting up the operation of an entire new service.

Subsidize Fares Through
Commercial Operators

These subsidies would be administered through the use of contracted services to private operators, e.g. for the TTC work trip services for 46 physically handicapped persons currently being implemented. The costs would be subject to negotiation, as the private operator must also buy vehicles to accommodate demand. As general guidelines, the private operator who was selected for the TTC project made a bid (renegotiable after six months) of \$6.25 per trip (for special van service). A similar proposal for taxi service in Ottawa-Carleton¹⁰ was for a taxi fare of \$2.85 per trip, and \$3.00 per trip for special vehicle service.

The subsidies to commercial operators would be similar to the costs of organizing the service as part of the public transit system, for which Ontario-wide costs have been estimated in Exhibit VI-13. In fact, the most probable administrative way of providing new services would be to contract out to commercial operators.

Should charitable organizations be contracted to provide special services, the costs would probably be less. The reasoning behind this is the lack of profit motive, the availability of volunteer help, and staff costs being covered by agency funds, rather than from revenue. This appears to be the case with the LIP-funded special services. However, as with the LIP operations, the service standards would likely

10. The bid was submitted by OC Transpo by M & Co. Bus Lines.

be lower than commercial operators under contract, since any reliance on volunteer help for long-term commitments will probably lead to service deterioration.

Subsidize Organizations

Most organizations in the past have provided transportation for specific trip purposes, although recently there have been organizations providing trips for all purposes. The subsidization of the latter kind is similar to contracting for services from charitable organizations discussed above.

Subsidizing organizations for their own trip purposes is already carried on by the Province, especially with respect to the Ministries of Education and Community and Social Services (see Chapter III). The Ministry of Health is a candidate for the special trip purpose (i.e. medical) service, although no estimates are available about potential cost. Private charitable organizations also have special purpose transportation requirements (about \$225,000 in Metro Toronto is spent by dozens of organizations for this kind of transportation). Clearly, an approximate estimate of costs of subsidizing special services through organizations must be preceded by decisions as to which organizations are eligible and for what trip purposes.

ADAPTATION OF AUTOMOBILES

The surveys generated information on possible interest by

EXHIBIT VI-14

ADAPTED AUTO INTEREST (FROM MAIL-OUT)
(By Driver's Licence)

| Driver's Licence | Would be Interested | Would Not Be Interested | Could Not Drive Even With Adapted Auto | Too Young To Drive | Total |
|------------------|---------------------|-------------------------|--|--------------------|-------|
| Yes | 110 | 265 | 9 | - | 384 |
| No | 277 | 526 | 285 | 2 | 1,090 |
| Total: | 387 | 791 | 294 | 2 | 1,474 |
| % | 26 | 54 | 20 | - | 100 |

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the disabled for a program to assist disabled people to acquire, convert, and learn how to drive adapted automobiles.

Exhibit VI-14 shows the results of a question about adapted autos asked in the mail-out questionnaire. The results indicate that between 25% and 30% of all mail-out survey respondents who replied (to this question) said that they would be interested in such a program. Also, about 30% of all those who were interested do hold a driver's licence.

It is likely, as is the case in other countries (U.K.) that an adapted auto program would apply mainly to those who are severely disabled and would require a special vehicle. The potential market for adapted cars would also possibly be constrained by age (over 18, likely under 65), and by disability. The disability types that are most common at handicapped driving schools are para- and quadraplegia and back/spine injuries, although people with a wide variety of disabilities have learned how to drive a specially adapted automobile.

The number of candidate disabled in the province for an adapted car program, therefore, is realistically much less than those who said they would be interested in such a program. If all those who said they are interested are extrapolated to the entire Ontario urban handicapped population, about 85,000 would be interested. However, if the potential market were restricted to those within the age, income, and disability constraints discussed above, there would be almost 18,000 to 20,000 who would comprise the potential market for an adapted car program.

If a program were established in Ontario, it is difficult to predict how many people would actually participate. It would depend primarily on how well the program was marketed and the extent of public financial assistance. If Ontario had historically developed along the line of the British in this area (in the U.K. "invucars" are given to eligible disabled) possibly about 2,000 to 3,000 people would now be participating. This would represent about 10% to 15% of the potential market as calculated above, possibly a realistic figure. Since 2,000 to 3,000 would be an accumulated figure, the participation rate on an annual basis would probably be no more than several hundred. As expressed above, the attractiveness of the program to the disabled will affect the participation rate to a considerable extent.

Cost Estimates
For Adapted Automobiles

The expenses in providing assistance to the disabled to drive specially adapted automobiles would include: the cost of the vehicle (\$3,000 for a standard car, \$5,500 for a standard van), the cost of conversions (as low as \$100.00 for hand controls in an automobile and as high as \$5,000 for raised roof, hand controls, electro/mechanical lift in a van), the cost of training (up to \$500,000), and the costs of operating the car. The Province could establish a variety of loan/grant programs to cover the costs of affording the handicapped person the possibility of driving by himself. As indicated above, the potential market for specially adapted cars is about 2,000 to 2,500 people

(compared to about 700 with special licences - often indicating some alterations to vehicles - existing at present).

The main point about the costs of an adapted car program is that, even paying for the purchase of a standard automobile, the special car solution can be less expensive than to provide an unlimited special van service. The average disabled who would be a frequent user of a special van service, for example for work purposes, would be very expensive to transport. In the TTC experiment, the projected cost per passenger per year is over \$3,000, for example, and it might be less expensive to assist potential users of this system to drive an adapted car.

INTERPRETATION OF DEMAND AND COST ESTIMATES

These demand and cost estimates presented thus far have been generated from the data produced from the surveys undertaken as part of the study. They were presented as preliminary estimates, and are now subject to further modification and interpretation.

Data Base

The first question to be examined is whether the surveys are valid as to number of physically handicapped and the overall accuracy of their responses to the survey questions. These points can be summarized as follows:

1. The total estimates of disabled with transportation problems in Ontario is subject to the qualifications outlined in Chapter II. The two different estimates used for Metro Toronto highlight the difficulty in the total population estimates' procedures.

The total disabled with transportation problems estimates are probably conservative (i.e. low) as discussed in Chapter II.

2. The samples selected for these surveys, although possibly more representative of the disabled with transportation problems than any other set of samples, are subject to certain biases outlined in Chapter V.

The people interviewed in the Metro Toronto survey, the other cities' survey and all those who responded to the mail-out questionnaire, probably travel somewhat more than the average disabled person. About 30% of those asked to be interviewed in the Metro Toronto and other cities personal interview surveys refused to grant an interview, and about 60% of those who received the mail-out questionnaire did not respond. Although there are valid reasons for many of these people for not responding to the surveys, it could be argued that their current and future trip rates would be less than those who did respond.

These limitations in the data base are very difficult to quantify, although they tend to cancel each other out. A way of testing the validity of the demand estimates is to compare to an actual situation. Sweden was the country which had the most experience in this area, and data was available for the City of Gothenburg.

Comparison With Gothenburg

Gothenburg has an existing publicly-supported transit service specially designed for the physically handicapped. This Swedish city provides a fully comprehensive set of special services, with the only

limitation being a maximum of eight leisure (off-peak) trips per month by the disabled who cannot use public transit. The ridership in Gothenburg is compared to the expected ridership of a city of a similar size based on preliminary estimates of the surveys in this study. The estimates used are calculated on the basis of a ten-trip maximum for other than work and education purposes.

| GOTHENBURG, SWEDEN - POPULATION 450,000, ELIGIBLE DISABLED 2% | | |
|--|--------------------------------------|--|
| Service | Gothenburg Average Daily Trips | Average Daily Trips for Equivalent Size City in Ontario* |
| Taxi trips subsidized for those who cannot use public transit | 2,000 | 2,025 |
| Special vehicle trips for those who cannot use public transit and who need a special vehicle | 400 | 525 |

* Compiled from other cities' survey data for a general population of 450,000.

The above table shows that the estimates for an equivalent Ontario city are somewhat higher than the actual demand experienced in Gothenburg. However, Gothenburg is predicting an increase in the number of disabled users and thereby an increase in total demand.

There are problems of comparability between Ontario and Gothenburg. First, the eligible disabled - at 2% - is higher (and is growing) than that projected for the Ontario situation - 1.3% (see Chapter II). Second, Gothenburg is a more public-transit-oriented city

than an equivalent one of the same size in Ontario, and thus, probably attracts a higher special transit ridership. Gothenburg probably represents a fairly mature transit and special transit situation with a demand that would exceed that of an equivalent Ontario city.

Preliminary data from the Ottawa-Carleton experience, a city that is roughly the same size as Gothenburg, Sweden, indicates a much lower demand. Special services are now being provided to those disabled who cannot use public transit for medical and work trips. The following figures indicate that, at least in the very initial stage of a service, ridership is low:

Special vehicle service: 240 to 250 trips/week

Taxi-type service: 400 trips/week.

Therefore, it is concluded that some of the preliminary assumptions about future travel behaviour of the physically handicapped should be modified.

Re-examination of
Demand and Cost Assumptions

There are two demand assumptions and one cost assumption which bear re-examination. Each will be discussed in turn.

Market for New Services

In preparing preliminary demand estimates, it was assumed that all eligible physically handicapped people would be attracted to the new service, and that all of the existing trips taken on the mode of the new service (either taxi or commercial van) would be taken on the new service. In practice, this would not be the case. For example, school trips by disabled schoolchildren would not be attracted to the new service (or if these trips were attracted by the new service, then the existing disabled schoolchildren transportation service paid for by the province would no longer be necessary).

It is probably more realistic to assume that the market for the new transportation services would be only those people who said that they would take the service if it were offered at the fare of regular public transit services. Of the total number of the disabled who were interviewed in the Metro Toronto and other cities' surveys who could not use public transit, 41% said they would use taxis if the fare were lowered to regular transit fares, and of those who needed a special van, 33.5% said they would use one if it were offered at a 30¢ fare level. Therefore, the effective market for the new service would be about two-fifths and one-third of the eligible market in each case.

Future Demand Estimates

Those people who replied that they would take a taxi-type service or special van service at regular transit fares were asked to estimate how many additional trips they would make if the services were

provided. Of those who replied, the additional trips projected were at the rate of .84 trips per day in a special van and .64 trips per day in a taxi-type service. This projected trip rate is probably an overstatement of actual future travel, since the existing trip rates by taxi and by special van was much less than the additional trips that these people intended to make.

We feel it is a reasonable assumption that people do not travel as much as they say they will. Therefore, we considered that the trips that respondents said would be additional to their existing travel would, in fact, be their total trip-taking for the new special service.

Lower Salary Costs

In costing future services, regular transit operator salaries were used for computing salary costs. Operators' salaries are about 50% of total capital and operating costs (depending on the features of their operation). However, it appears that existing drivers earn much less than regular transit drivers, and are not unionized. The salary structure for private special service operators is lower than regular transit service operators. Accordingly, we could make the assumption that about one-third could be deducted from salary costs, which means about one-sixth from the total costs for providing new services.

Revised Estimates

To show how the revised assumptions affect preliminary estimates, we examine a combination of special van and taxi option for all

EXHIBIT VI-15

REVISED DEMAND AND COST ESTIMATES FOR SELECTED NEW SERVICE OPTION

| | No. of Eligible Disabled (000) | PRELIMINARY ESTIMATES BASED ON SURVEY DATA | | ASSUMPTION ONE Number of Disabled Responding They Would Use New Services (000) | ASSUMPTION TWO Trips per Day Assuming Demand for New Services is Only the Trips Indicated as Additional Trips (000) | Annual Costs Given Assumptions One and Two (000,000) | ASSUMPTION THREE Annual Costs Given Reduced Driver Costs Assumption (000,000) |
|--|--------------------------------|--|------------------------|---|--|--|--|
| | | Trips Per Day (000) | Annual Costs (000,000) | | | | |
| Service | | | | | | | |
| Special van service for those who need it | 15.7 | 10.4 | \$20.4 | 5.2 | 4.4 | \$ 8.6 | \$ 7.2 |
| Taxi-type service for rest of disabled who cannot use public transit | 55.6 ¹ | 34.5 | 36.6 | 22.8 | 14.6 | 15.5 | 12.9 |
| | 47.3 ¹ | 29.3 | 29.7 | 19.4 | 12.4 | 12.6 | 10.5 |

Note

1. The two different Metro Toronto estimates account for the two figures for number of eligible disabled.

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those disabled who cannot use public transportation in urban centres in Ontario. Cost estimates previously calculated on a preliminary basis have been revised as shown on Exhibit VI-15.

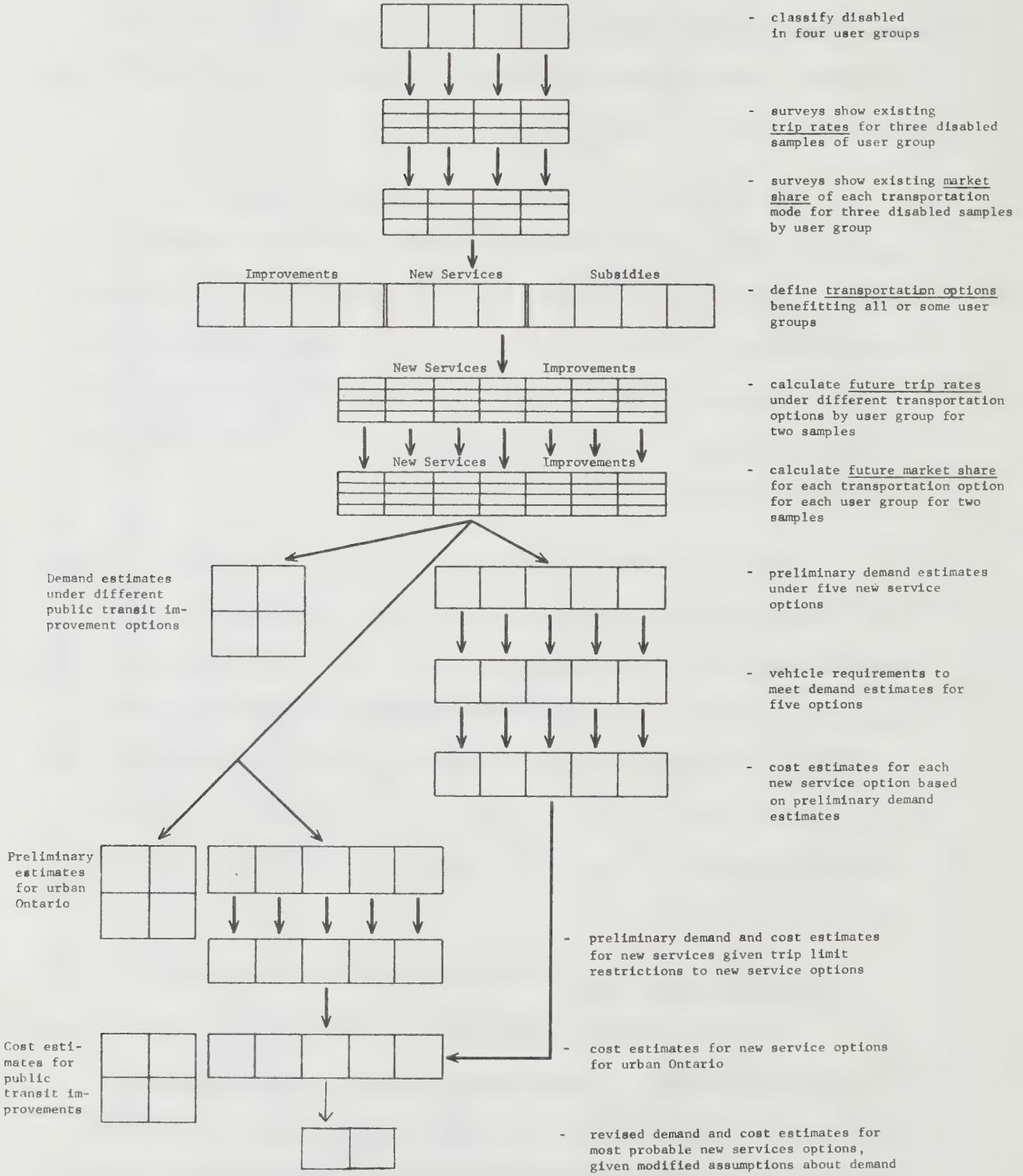
Exhibit VI-15 shows that it is probable that if the revised assumptions about demand and cost estimates are valid, the cost to the province of meeting the needs of disabled people who cannot take public transit would be between \$15 and \$20 million. These cost estimates are total estimates, without any proposed municipal/provincial costs sharing arrangement. In addition, there would be a small offsetting revenue (e.g. 30¢ per trip).

This cost estimate would apply if the province were to embark upon a special transit subsidy program in the immediate future and if all municipalities avail themselves to it. Once the service has matured, then other physically handicapped who are eligible but who had not immediately responded to the possibility of taking the new service could be attracted to that service. Therefore, between five to ten years from now, or possibly longer, the demand for special services might go beyond the revised figures.

Methods to Reduce Costs

We have considered thus far the likely demand for new services if these services were to be provided. However, there are ways to reduce costs through lowering the service level (which would reduce demand) or restrict the eligibility of users. Such procedures might be

LOGIC OF TRANSPORTATION ANALYSIS



considered as part of the first stage introduction of new services for the disabled. They are as follows.

Reduce Service Level

1. Fares could be set above the regular transit fare which would reduce demand through this price mechanism.
2. Making an advance booking procedure mandatory, whereby the disabled would have to plan and book in advance their travel arrangements, would inhibit discretionary travel demand.

Restrict Eligibility

1. Only certain trip purposes, such as work and education or work and medical, could be provided.
2. The user group could be limited, possibly beginning with the disabled who need a special van service.
3. The number of trips per month, possibly for the non-regular trips as is the case in most Swedish cities, could reduce the number of trips to be provided.

The above are some of the ways of controlling cost by restricting eligibility or reducing service levels. Cost estimates given these or any other set of restrictions can be made from the survey data.

SUMMARY

The steps of the analysis of this chapter are illustrated in Exhibit VI-16. Transportation for the disabled can be improved in essentially two ways:

- improvements to existing public transit
- establishment of new services specially designed for the disabled.

The public transit improvements can be fairly marginal, involving only minimum equipment modifications and some staff and marketing expenditures. However, their impact would also be fairly marginal.

Major modifications, involving quite substantial equipment and physical plant expenditures, would have a greater impact on making public transit more accessible to the physically handicapped. However, the more severely disabled would still find in-city travelling by transit virtually impossible.

New door-to-door service options could be provided to include various disabled users, as shown below:

| Transportation Options | USER GROUPS | | |
|-------------------------------------|----------------------|--|------------------------------|
| | Need Special Vehicle | Don't Need Special Vehicle but Cannot Use P.T. | Can Use P.T. With Difficulty |
| 1. Door-to-door special van service | X | | |
| 2. Door-to-door special van service | X | X | |
| 3. Door-to-door special van service | X | X | X |
| 4. Taxi-type service | | X | |
| 5. Taxi-type service | | X | X |

Demand and cost estimates have been prepared and modified according to assumptions about future travel behaviour based on the surveys' results. Anticipated costs for No.1 and No.4 to provide most cheaply for all the disabled who cannot use public transportation would be between \$18 and \$20 million for all municipalities over 10,000 in the province.

Estimates of future disabled demand should be considered less precise than the estimates of travel demand developed over the years for the general population. Similarly, estimates of costs are based only on limited or ancillary experience. It is really only through experimentation with new services that will provide a means to corroborate the demand and cost estimates developed in this chapter.

Subsidizing handicapped people directly, or subsidizing operators and other organizations, really does not affect the total cost. Restricting the number of eligible users and uses do. Subsidizing only certain people or organizations is one means to restrict the number of users and uses, and thus can result in lower total costs.

Subsidizing current operators may be administratively preferable, especially for smaller cities. For example, a city could opt for service No.1 and No.4 above, subsidizing taxi rides to comply with service No.4.

Subsidizing the adaptation of autos and promoting their use by the disabled could decrease the demand for special services, and thus reduce the total cost of new special services programs.

VII - POLICY ALTERNATIVES AND IMPLICATIONS

In this chapter, we discuss possible policy alternatives for the Ontario Government with respect to new or improved transportation services for the physically handicapped within urban centres. We attempt to identify the relevant policy questions, suggest various transportation options and their costs, and show the implications for the various Ontario ministries. Also discussed are the implementation approaches that would logically follow the adoption of specific policy directions.

POLICY ISSUES

Policy options can be identified and costed, and analogies made to practices in other countries and jurisdictions. However, we cannot recommend how much is enough public support of the transportation services to the disabled. It is the political process which must decide among alternative policies and the amount of public funding to support them.

Our analysis embraced a wide variety of programs that could improve transportation services for the disabled. An extensive program for all those who could not use public transit would cost annually at least \$15 million, and even partial solutions that make a meaningful contribution to handicapped transportation across the province would cost several millions of dollars.

The Ministry of Transportation and Communications initiated this study based on its need to respond appropriately to continuing requests from various representatives of the disabled, as well as because of its responsibility to provide, through its subsidy programs, transit facilities for all Ontario urban residents. Currently, the Province is spending about \$55 million on transit subsidies.¹ To adequately serve the 3% of the population that is handicapped, the Province (including municipalities) could easily spend that amount. Thus, programs designed to improve transportation for the disabled can be very expensive.

We have concluded that the basic policy questions facing the Government of Ontario are as follows:

1. Is there a need for new or improved transportation services for the disabled and how should the Ontario Government respond to this need?
2. If increased transportation assistance or improved services are provided, what part of the physically handicapped population should receive this assistance?
3. What are the service alternatives to meet the need and how much will it cost the Province?
4. What are the implications for various Ontario ministries to establishing new services or improving existing transportation services?
5. What are the alternative ways of implementing programs for new or improved services?

1. This figure does not include the \$30 million in subsidies to Metro Toronto for subway construction for 1973-1974, nor the \$2 million for the operating deficit of GO Transit and \$2 million for general demonstration projects.

As shown by the questions above, consideration of new or improved transportation services for the disabled goes beyond municipal subsidy policy issues of the Ministry of Transportation and Communications. The policy implications to the latter program are a sub-set of the range of policy implications to other programs within the provincial government and are elaborated below.

GENERAL RATIONALE FOR ASSISTANCE

In terms of justifying more support for new or improved transportation services the following logic might apply. First, there is an expressed need by handicapped people for new or improved services. Second, there is a relative need, since for many physically handicapped people existing transportation options are severely restricted. Third, it could be argued that the provincial government's transportation and social services policies do not adequately serve the disabled segment of society.

Expressed and Relative Need

It seems that there is no question about the need for improved transportation services. Continuous references are made to urban transportation as being a severe problem by organizations representing or serving the physically handicapped. Such organizations often point to the chief difficulty in delivery of recreation, education, and medical services to the handicapped to be the lack of economic, adequate transportation services. The emergence of numerous transportation services under LIP grants is further demonstration of the basic need.

The need is also apparent when one examines the relative utility of improved transportation services for the physically handicapped as opposed to other segments of the population. The handicapped, like the poor, are a disadvantaged group. However, it is a relatively smaller sacrifice for low-income people to buy public transportation trips than for low-income physically handicapped people to buy taxi or commercial van trips (which in Toronto, for example averages \$6.00 or \$7.00 per trip). Other disadvantaged groups who are outside regular transit services generally have more access to automobiles than the physically handicapped, and can walk relatively more easily than the physically handicapped people. Therefore, it can be argued that there is a relatively greater need for improved or new transportation services for the physically handicapped, than for these other groups.

Survey Results
Confirmation of Need

The surveys showed existing travel by the disabled to be half or less that of the average Ontario resident, and a projection of increased travel by respondents if economic, adequate services were offered. Beyond this indication of need, the surveys also revealed that:

- about a quarter of the trips by the disabled are by taxi, a very expensive mode, compared to the average taxi market share of about 2% for the general population
- the dominant modes used by the disabled are taxi, special van, and as auto passenger; for the least severely disabled it is public transit.

These results show how the disabled is obliged to travel via very expensive transportation services, or to depend on others for transportation. One might conclude that neither is very satisfactory for the disabled.

Existing
Government Programs

Since the Province is already subsidizing transportation in urban areas, it could be argued that it will only be equitable when the transit services can be used by all residents. For those who cannot use existing transit services, improvements should be made to accommodate them as well.

The counter-argument is mainly that the cost per trip that will have to be absorbed by the public would be significantly greater than present public subsidies to existing transit services. The regular transit subsidy is 5¢ to 15¢ per trip, while some dial-a-bus services might result in subsidies per trip of up to \$1.00. However, the subsidies per trip for the physically handicapped might reach \$6.00 or \$7.00 depending on the service offered and fare charged.

As an adjunct to its social programs, the Province is now spending a considerable sum of money on transportation for the physically handicapped. However, it could be argued that the delivery of health and community and social services (but not education) is weakened by inadequate provision of transportation services in many cases. Improving that aspect of social services would support the social program objectives, e.g. work, rehabilitation, and recreation programs.

If transportation deficiencies are viewed solely as the weak component of certain social services delivery, then transportation for the disabled should be improved to the extent that the social programs are adequately supported. To do this would not require a general upgrading of the transit system.

Thus, the general rationale for improving transportation services for the disabled across the board is based on need. Arguments relative to existing government programs can be made both for and against improved services, but it cannot be denied that about 3% of the general population do have transportation problems.

DISABLED USER GROUPS

Since it is unlikely that new or improved transportation services will be provided immediately for all physically handicapped people with mobility limitations, it is important to review how the physically handicapped population can be divided into user groups. In this way priorities for new or improved services can be assigned.

There are three basic ways to group the disabled for transportation purposes. First, there is the relative degree of his mobility restriction. Second, there are other factors which can be used to distinguish one handicapped person from another, such as income, age, and whether he has access to an automobile. Third, the user groups may be defined by the purpose of the trip or the time of day in which the trip was taken.

Mobility Limitation

In this study we have used three degrees of mobility limitations, which are as follows:

- those disabled people who must use a special vehicle to travel
- the people who do not need a special vehicle but who cannot take public transportation
- those people who can use public transportation but with difficulty.

Programs could be established to assist any of these three groups. A major problem, however, is that there is significant overlapping of the three groups. People who might seem to require special vehicles for travel, e.g. those in wheelchairs, do take taxis and other passenger cars, and in some cases even drive themselves. There are also people who do take public transportation with a great deal of difficulty, while others could take it but do not. Nevertheless, experience in other cities and other countries shows that new or special services can be set up for (a) those who are wheelchair-bound or need special assistance, and (b) those who need essentially a door-to-door service, although not requiring special boarding assistance or being wheelchair-bound.

If a new service were established, it would be politically difficult to assist those in category (b) without also assisting those in category (a), but it would seem feasible to do the reverse, i.e. assist only those in category (a). To provide transportation services to the more severely disabled - category (a) - can be assumed to be

more socially desirable, since those who are less severely disabled have more transportation options open to them.

This same reasoning would tend to place less priority on category (c) - those who now use public transit but with difficulty.

Socio-
Economic Restrictions

New or improved services could be restricted to physically handicapped people within certain age, income, or other socio-economic constraints. It would appear to be somewhat artificial to make age a restriction (say those over or under 65). On the other hand, it is possibly more feasible to restrict user groups to those with less than a set disposable income.

One of the more feasible ways of discriminating on the basis of income would be to isolate those people receiving disability pensions and who cannot take public transportation. According to our mail-out survey, approximately 30% of the 33,000 people now receiving disability pensions would fall into this category. It is interesting to note that Denmark uses this criterion for determining who is eligible for receiving transportation assistance.

The only other socio-economic characteristic that could be meaningful in this case is whether a person has access to an automobile. Presumably, one who does have such access would have fewer transportation problems. However, excluding people from a new transportation service just because they happen to have friends or relatives to drive them has

been considered as unfair by the handicapped interviewed. Disabled people tend to run out of friends to take their places.

It would certainly be possible to select any one group of the physically handicapped and satisfy its transportation needs. The Province has already done so for physically handicapped schoolchildren for low-income institutionalized elderly, among others.

Limitations in Trips

A convenient way of limiting user groups is to provide new services for certain trips only. For example, as is the case with the TTC pilot project, work trips only could be provided for or subsidized. In certain cities in Sweden, the distinction is made between regular (primarily work, medical, and education) and non-regular trips (mostly recreation and personal purposes). Other possible trip priorities could be those which assist non-profit and public social and health agencies to deliver their services.

As an alternative to limitation by trip purpose, a ceiling on the number of allowable trips can be used to further define the eligible user group.

Selecting User Groups

We discussed above the various ways in which different user groups can be singled out for new or improved transportation services. The categories are numerous, and to illustrate we show in Exhibit VII-1 a partial set of user groups that could be identified.

EXHIBIT VII-1

POSSIBLE USER GROUPS

| LIMITATION BY DEGREE OF MOBILITY AND SOCIO-ECONOMIC QUALIFICATIONS | LIMITATION IN PURPOSE OF TRIP | | | | | Personal/ Business/ Shopping |
|---|-------------------------------|-----------|---------|-----------------------|---|------------------------------------|
| | Work | Education | Medical | Recreation/ Social | | |
| <u>Need of Special Vehicle:</u> | | | | | | |
| - age | x | x | x | x | x | x |
| - income | x | x | x | x | x | x |
| - other socio-economic limitations | x | x | x | x | x | x |
| <u>Cannot Use Public Transit:</u> | | | | | | |
| - age | x | x | x | x | x | x |
| - income | x | x | x | x | x | x |
| - other socio-economic limitations | x | x | x | x | x | x |
| <u>Can Use Public Transit with Difficulty:</u> | | | | | | |
| - age | x | x | x | x | x | x |
| - income | x | x | x | x | x | x |
| - other socio-economic limitations | x | x | x | x | x | x |

Some user group categories make more sense than others, both from a standpoint of rational social policy and transportation solutions. To assist in policy-making, we put forward suggestions as to which groups might logically be served first:

1. Those who need a special vehicle, since their needs on an individual basis are greater than the less severely disabled.
2. Possibly those who are below a certain level of disposable income, although restricting people on any socio-economic basis would be seen by some as a conflict in the principle of providing public transportation to all people.
3. Possibly limitation in trip purpose to regular trips, particularly work. However, it might be preferable to limit trip number rather than trip purpose to provide the handicapped with a maximum of choice and trip purpose.

There are different cost and service implications to these and other sets of user groups. Some of the cost and service implications are outlined below.

TRANSPORTATION SERVICE OPTIONS

In Chapter VI, a series of transportation options was described and related to specific user groups (see Exhibit VI-4). While many of the transportation options discussed are discrete new or improved services that can be implemented individually, many of them are quite complementary.

For the purposes of discussion, the basic options are described, taking into account the complementarity of the options. They are as follows:

Public Transit Improvements

1. A program to alter the interior of buses without major modifications, and phasing in of lower step model new buses.
2. Various outreach or training/promotion programs to increase use by and acceptance of the disabled re public transit.
3. Modify some of the existing bus fleet to accommodate wheelchairs.
4. Modify fixed rapid transit (i.e. the Metro Toronto subway) to accommodate wheelchairs (i.e. install elevators or design and develop inclinator).

Any one of these options could be implemented, although to make use of #4, a special service would be required to transport disabled to and from subway stations.

New Services

1. A door-to-door special vehicle and taxi service would be the most economical way of transporting the disabled who cannot use public transit, and could be extended to those have difficulty with transit if required.
2. A program to assist the disabled to acquire, operate, and learn how to drive private automobiles.

These new services could be implemented instead of or in addition to making improvements to public transit. Both door-to-door service and adapted car programs are complementary, while the new services and public transit improvements are only partly complementary.

Subsidies Programs

1. Provide transit tokens or funds to organizations to subsidize special van services.
2. Provide transit tokens or assistance to organizations to defray taxi or special vehicle fares.

The implementation of subsidies programs would be alternative to the new door-to-door services option. Subsidies programs would be complementary to public transit improvements programs in the sense that they would assist those who still could not use public transit after the improvements.

Capital-Intensive
Public Transit Improvements

Cost and demand estimates are provided in Chapter VI for the capital-intensive improvements to the existing public transit system. The decision with respect to the more capital-intensive improvements to existing transit system can be treated to a great extent separately from the special services decisions. It is felt that physically handicapped people would have to be assisted through special services whether or not long-term plans include the acquisition of buses designed to better accommodate physically handicapped and whether or not elevators or other major access improvements were made to the subway system in Metro Toronto.

Questions concerning capital improvements should be related to the desirability of improving transportation for everyone, although they will continue to be raised by representatives of handicapped groups. The timing in capital-intensive improvements decisions is important to the planning and operation of special services, since the sooner the regular public transit system is improved in terms of accessibility to the handicapped, the sooner special services established can be adapted to link to the regular transit system.

An exception to the separate treatment of capital-intensive improvements to vehicles and equipment in the regular public transit system is the possibility of acquiring a limited number of vehicles that can accommodate wheelchairs. For example, regular transit service, such as the new dial-a-bus services in the Province, can in some cases

make use of vehicles that are specially equipped. Provided that the intention of the dial-a-bus service is not only to connect people to the regular transit system, with all of the accessibility limitations inherent in the system, the dial-a-bus system can be directly used to improve transportation services for the handicapped. It is conceivable, for example, that dial-a-bus systems may be used in the off-peak periods to serve the physically handicapped on a demand-responsive basis. Planning for new dial-a-bus system could take into account the potential for service to handicapped user groups.

Special Services and Subsidies

These two types of transportation options point at a fundamental difference in improving transportation for the disabled. Special services imply that new transportation services are required, while the subsidies program tend to make use of existing transportation services.

As discussed above, the question about which user group(s) should be served first or at all should be answered. The more people served the more likely it is that new special services will have to be established.

Another question is the level of service that should be provided to the user groups - geographic coverage of the service, time of day, frequency, degree of comfort and personalized nature of service. Also, the responsibility for implementation of programs to establish or improve special services for the physically handicapped will have a

direct bearing on the level of service provided. For example, if special services are provided by charitable organizations, the service may be somewhat less reliable than if it were provided by the transit property in a given municipality.

The important policy alternative in the distinction between establishment of new services or subsidization of existing services is whether the services are believed to be an extension of transit or social services. The Ministries of Education and Community and Social Services are now providing, through subsidy, directly operating themselves, or contracting out, transportation services to achieve their program objectives. The Ministry of Health is undergoing the same type of policy considerations. Using transportation tokens or subsidizing organizations to improve their transportation services could be viewed as further extensions of the Ministry of Community and Social Services' responsibility.

The Ministry of Transportation and Communications is currently subsidizing transit services, adequate for 97% of the people the services reach, and providing services for the 3% who are now not adequately serviced would be an extension of this transit policy. Establishing new special transit services would more likely be the responsibility of the Ministry of Transportation and Communications (MTC) in cooperation with municipalities. With the planning assistance of the MTC, municipalities would be best left with the flexibility of selecting their own approaches to providing new or improved services. The Ministry could provide vehicle and service guidelines and have a funding responsibility.

It is suggested that the involving MTC and the possibility of establishing new special services is the most appropriate policy. The transportation services which might be provided are relatively complex, with little operating experience thus far developed in North America. In addition, the special equipment needed is more in the area of MTC's expertise than any other Ministry. Finally, the MTC has an established pattern of relationships with municipalities and could deal with them in terms of new services.

It is suggested that the basic problem is not simply lack of money in the pockets of the physically handicapped, but is also the lack of adequate transportation services. Since the MTC holds the responsibility for transportation in the Province, it follows that the Ministry should assume responsibility for disabled transportation and assist in establishing new transportation services for those who cannot use regular public transit. Undertaking this responsibility should also assist the social agencies to achieve their program ends.

Policy Implications

If, as we have suggested, it is decided that the Ministry of Transportation and Communications maintains the primary responsibility for new special transit services, there are important policy implications for that Ministry as well as others. We describe below those implications for the MTC and the Ministries of Community and Social Services, Health, and Education.

Ministry of Transportation
and Communications

Let us assume that the Ministry is responsible to advise and fund in part municipal programs to improve the existing public transit system, institute training programs, and establish and subsidize special services for the disabled. The total capital and operating cost on an annual basis for modifications to the existing system and new services (besides adapted automobiles) could reach over \$100 million annually.

A table of the government provincial deficits for new special services alone, under alternative assumptions as to restrictions of the service, is presented in Exhibit VII-2. These deficits can be compared to the provincial operating and capital expenditures of \$55 million for the fiscal year 1974 for regular transit services. The figures in Table VII-2 represent deficits for new special services covering all cities in Ontario with a population of over 10,000, and for the purposes of discussion splits the costs between the Province and municipalities on a 75-25 basis.

The ways in which MTC might subsidize municipalities for establishing new special services are as follows:

1. Extension of current mechanism for transit subsidies, i.e. 75% of capital and 50% of the operating costs for approved expenditures.
2. Subsidy of a fixed amount for each subsidized disabled trip for approved trip purposes, similar to the Ministry of Education entitlements for transportation to school Boards.

EXHIBIT VII-2

COST ESTIMATES FOR SPECIAL VAN/TAXI NEW SERVICE OPTION¹
FOR ALL DISABLED UNABLE TO USE PUBLIC TRANSIT

| Type of Service | Revised Total Cost Estimates (000,000) | Provincial Share (000,000) | Municipal Share (000,000) |
|---|---|----------------------------------|---------------------------------|
| Special van service for those who need it | \$7.2 | \$5.4 | \$1.8 |
| Taxi-type service for remainder who cannot use public transit | 12.9 ² | 9.7 | 3.2 |
| Total: | 20.1 | 15.1 | 5.0 |

Notes:

1. Cost estimates are revised as discussed in Chapter VI.
2. Based on higher Metro Toronto disabled population estimate (see Chapter II).

Peat, Marwick and Partners

3. Expenditures of up to x% of the regular transit operating costs subsidies, the x being at least in proportion to the physically handicapped with mobility problems in the general population (i.e. about 3%).

The subsidy arrangements could stipulate performance standards (i.e. contract and equipment standards and service criteria) which might vary according to city size. Therefore, the Ministry would be responsible for guidelines with a good deal of municipality flexibility, and for providing funds up to a budgetary ceiling.

The service performance standards would probably vary according to size of the municipality, but in turn it would include the following:

- for wheelchair passengers, a door-to-door service which would include boarding and debarking assistance from the driver
- door-to-door service on a pre-booked basis with some demand-responsive service for larger scale operations
- reasonable travel time for the life of the trip, and well-maintained schedules and appointments
- equipment with safety and comfort minimum standards
- simplified and properly controlled fare collection procedures.

Turning to the other parts of the other services package, the Ministry would have limited involvement. Offering buses and providing more shelters at stops would really be a municipal concern with little backup except through existing subsidy programs. On the other hand, the MTC might take the initiative in assembling a package training program and vehicle(s) specially equipped for this purpose.

The acquisition of future transit equipment and assistance in improving access to Toronto subway system are programs in which the MTC will be involved in any case, since such decisions affect regular transit service as well. If the Ministry has overall responsibility for transportation for the physically handicapped, it will be in a better position to integrate the planning for new buses and subway access improvements and new special services for the physically handicapped.

Ministry of Community
and Social Services -
Support Responsibility

If the Ministry of Transportation and Communications assumes general responsibility for improving existing and providing new transportation services for the disabled, the Community and Social Services (CSS) might be called upon to assist in defining the user groups and their eligibility for receiving special transit services. Otherwise, the Ministry might simply work with the Ministry of Transportation and Communications to draft guidelines for user groups to be administered by individual municipalities.

The most important support CSS could provide would be through its field operations and local contacts with all municipal and private social agency groups in the Province. As part of its outreach programs, the Ministry could stimulate local involvement in shared cost (Provincial/Municipal) programs. The objective would be to have the local CSS offices assist in the planning of prospective municipal disabled transportation for which Provincial financial assistance is sought.

The Ministry of Community and Social Services would probably be the most logical agency to administer the adapted automobile program. This program could in fact be an extension of existing programs to provide special devices and prosthetic appliances to the disabled. To providing instruction, hand controls, and possibly loans or grants to handicapped people in European countries appears to be the responsibility of the Social Service Agency, and seems appropriate for the Ministry of Community and Social Services. The cost implications of such a policy would depend on the schedule of benefits and number of people applying for such assistance. With a possible 2,500 people who might wish to participate in this program as identified in Chapter VI, the program could be a substantial one indeed. The exact spending level depends on the benefits covered and whether grants or loans are provided. As discussed in Chapter VI, hand controls for cars start at about \$100, while driving instruction can range from \$50 to \$500, and vehicle costs and the purchase price of the lowest priced automobile to a van specially equipped with an electro-mechanical lift.

Community and Social
Services - Primary
Responsibility

If new special services are not established by the Ministry of Transportation and Communications, and it was decided that the subsidized service package would be preferable, the Ministry of Community and Social Services could possibly have much wider responsibility for handicapped transportation than is envisaged in the new services package. The Ministry could assume responsibility for administering the funds to be

transferred to either organizations or individual handicapped recipients for defraying transportation costs.

The Ministry of Community and Social Services appears to have the best contact with non-profit agencies and handicapped people.

Therefore, it could administer funds as follows:

- directly fund local non-profit and municipal agencies to provide or pay for special transportation services for the disabled
- issue directly through disability pensions, regional offices, or municipal agencies, taxi and other commercial transportation services coupons.

Both these procedures would follow other social program policies, and the Ministry of Community and Social Services has suitable experience in such procedures. The first procedure listed above - providing funds to other agencies to administer - would tend to direct closely where transportation services are to be provided. Transportation "chits" to the disabled, the second procedure listed, would tend to permit the disabled to make trips more at their own discretion. In both cases, the actual operating responsibility and decision-making could be at the level of the municipality, rather directly administered by the Ministry of Community and Social Services. The cost implications of providing for transportation in this way depend on the user groups, who are included in the policy.

Ministry of Health

The implications of better transportation services being provided for the disabled affect the delivery of health services. Providing

new services for medical purpose trips, or defraying the cost of medical purpose trips would have an impact on the demand for health services at treatment centres, an impact that would have to be examined carefully.

What is perhaps of administrative concern to the Ministry of Health is the number of people who are temporarily physically handicapped and would not have already obtained eligibility for transportation to treatment centres. There would have to be some procedure whereby the treatment centre staff could determine the eligibility of individuals quickly in order that they might benefit from a special transportation service.

If the handicapped person is not being transported by a service established for the transportation of the physically handicapped, the Ministry of Health might consider either providing budgets to the treatment centres to set up or pay for transportation expenses, like the Ministries of Education and Community and Social Services, or have the cost assumed by part of the overall Health Insurance program.

Ministry
of Education

Unless the Ministry of Transportation and Communications were to assume responsibility for the transportation of physically handicapped schoolchildren, the impact of any new program on the Ministry of Education would be marginal. It is not suggested that there be any change in the present Ministry of Education program to provide transportation for disabled schoolchildren, since no comprehensive examination was made of the efficiency of that arrangement.

It is possible that the Ministry of Education might wish to consider, at the School Board level, the option of using any new service established. If so, the most feasible administrative arrangement would be for the individual school Board to pay the direct cost per trip of the new services used. What is more likely, however, is for a private operator with experience in transporting disabled schoolchildren to obtain a contract to establish the special service for the adult disabled.

IMPLEMENTATION

If the new services package is decided upon and the Ministry of Transportation and Communications given the overall responsibility for disabled transportation, the following implementation steps should be considered:

1. The provincial government establish first-year and five-year budgets as subsidies to municipalities for the transportation for the disabled, and that the subsidies be large enough to induce municipality participation.
2. MTC prepare standards and planning guidelines to be followed by municipalities, and design training programs for use by the municipalities.
3. MTC, possibly through the Ontario Transportation Development Corporation, become familiar with special vehicle equipment and possibly taken an even greater development role in new equipment.
4. Municipalities individually should plan in cooperation with the handicapped community and local CSS offices how to best use potential provincial subsidies and local resources for providing the services.
5. MTC underwrite initial demonstration programs, primarily consisting of the first requests from municipalities for special services.

Philosophy of Municipal Participation

The cost sharing formula must be sufficiently large to attract the participation of municipalities, probably on a 75-25 basis. The municipal outlay for regular transit services is only a small part of the total costs, since operating revenues make up a large part of these costs. Revenue from disabled transit operations will only cover a fraction of the costs, which means that if the municipality has to pay, say 50%, of the operating deficit, then it is paying a major part of the total costs of the operation. In cost terms disabled transit is more akin to a social service than a subsidized transit operation. Thus, the cost sharing formula should follow social service cost sharing formulae, rather than transit cost sharing formulae.

Too high a municipal cost would undermine the provincial objectives of a new transportation services program. Possibly the Ministry of Community and Social Services could participate in the cost sharing arrangement, perhaps on a 75-25-25 MTC/CSS/municipality basis. In any case, alternative arrangements should be examined prior to establishing policies that simply follow transit subsidies practice.

Municipal Flexibility

Among the planning considerations by municipalities are use of existing vehicles, especially in off-peak hours. This would be particularly appropriate for municipalities with dial-a-bus programs in that the dial-a-bus system might most easily be converted to a service for the handicapped in an off-peak period.

Each municipality would have its own priorities, resource, and interest groups to whom they would respond. In terms of special services, there might be a variety of considerations, including the following:

- a given municipality might find it easier to raise money locally through charity for the acquisition of vehicles, while applying for Ministry support to operate its new vehicles
- many municipalities will likely prefer to contract out a special service, and in some cases it may be to a commercial operator and in others to a non-profit organization
- some municipalities might prefer to use existing taxis to transport many of the disabled rather than make a special contract with commercial operators to provide specific trip services.

If it is decided that there should be special services, the Province through the MTC should institute some basic service standards. Otherwise, a charitable organization or possibly a commercial operator might provide relatively poor service and not be properly controlled by the municipality. Specific problems to be avoided are among the following:

- a charitable organization with no special vehicles and reliance on voluntary drivers might provide only irregular service at best
- taxi or other commercial operators might provide second priority service to the disabled only when they have no regular passengers to serve at a particular time
- charitable or other organizations providing a service primarily to one group of disabled rather than all the members of a defined user group.

To ensure good service, it is recommended that the municipalities coordinate the special services, and in this role might even operate the dispatch centre. In the long run, it is possible that larger municipalities would incorporate the special services into their regular operation, staffed by drivers paid by the City.

The emphasis at present should be on the service roughly equivalent in quality to the regular transit service. The emphasis should not be on providing the service as a charity with indifferent performance standards. Municipalities may want to operate through an organization that can retain drivers as casual employees rather than having them unionized, but should endeavour to maintain satisfactory performance standards.

Beyond the maintenance of certain provincially specified standards it would appear that municipalities and their transit authorities are in the best position to maximize the use of existing equipment and to integrate different programs for improving transportation services generally with those oriented toward the disabled. The programs should succeed provided there is flexibility for municipalities to select the best approach for their problems within the general guidelines laid down by the Ministry of Transportation and Communications, coupled with proper planning of new services.

First Steps

The Ministry would have to set ceiling and formula for cost sharing. The ceiling depends on the service option desired, and the cost sharing formula on policies established.

As well, the Ministry might pay for all the costs of promising programs over a limited period as a demonstration of specific operations. This would ensure the operational success of the first services and thus the new program itself.

Above all, it appears incumbent upon the Province to develop at least interim policies fairly quickly as a result of current or anticipated pressure on municipalities to provide better transportation services for the disabled.

ALTERNATIVE POLICY DIRECTIONS

From an analysis of the policy options and their cost and implementation consequences, it would appear that there are three basic directions for the Province, as follows:

1. The Province could endeavour to provide a transit service for the handicapped that approximates the service for the non-handicapped. This would probably incur the full range of costs discussed above.
2. The Province could make limited, but substantial, steps in the direction of providing adequate transit service for the disabled. This direction would permit some experimentation and the opportunity to allow policies to develop.
3. The Province could take relatively little action, with the possibility that pressure from municipalities would lead to ad hoc decisions. This direction might result in precedents being established which could commit the Province to an undesirable program applicable to all municipalities.

Based on our analysis, we would conclude that ad hoc decisions would not be as appropriate for the Province as an experimental, flexible

approach that integrated handicapped transit planning within the main-stream of transit planning. One could assume that the handicapped transportation problem will somehow go away, and that there will be no ad hoc decisions. However, the recent local decisions in Metro Toronto and Ottawa-Carleton indicate that municipalities will be dealing with the problem.

Given that alternative direction No.3 is not attractive, the Province must establish how far it intends to support disabled transportation. Alternative No.1 - a full-scale program - has been outlined above. If the Province were to adopt a more limited program there are a number of choices. The Province could promote, at the local level, modifications to the existing transit system. Or, it could establish an adapted automobile program. However, both these programs would be criticized as peripheral to the main problem.

The most feasible limited starting point would be a special service limited in any of the ways we have suggested. It is recognized that a limited special services program may lead to further demands for expanding the services. By this time, however, the Province will have developed greater operating experience and will better appreciate the consequences of more extensive programs and how to develop them.

APPENDIX A

SURVEY METHODOLOGY AND APPROACH

SURVEYS OF DISABLED RELATED TO TRANSPORTATION

| Title | Purpose | Sample Size and Response | Disability Groups Included | Approach To Interviewee | Survey Instruments | Topics Covered | Present Trip Behaviour | Future Trip Behaviour | Price Sensitivity | Geographic Distribution | Perception of Existing Service |
|---|---|---|---|---|-------------------------------|--|------------------------|------------------------|-------------------------|-------------------------|--------------------------------|
| Handicapped and Impaired in Great Britain Office of Population Censuses and Surveys | To estimate the number of disabled over 16 years. To assess the health services. | 280,000 households Found 14,000 disabled | All in 5 categories of severity | Mailed contacts, phone follow-up personal interview | Questionnaire | Living arrangements, biographical data, history of medical care. Function test Use of aids | Only usual mode | No | Yes | As Per Census | No |
| Transportation Needs of the Handicapped: Travel Barriers Abt Associates Inc. | To determine the extent to which transportation is inaccessible to p.h. | 212 permanently disabled under care | All in 12 strata in accordance with the National Health Survey | Invited by mail followed by phone personal interview | Questionnaire Cards, Film | Biographical data Employment and income status, use of aids, functional test of mobility limitation | Frequency Mode Purpose | Purpose only | Yes | Boston, No Distribution | Yes |
| To Improve Public Transport for the Physically Handicapped Faculty of Engineers University of Western Ontario | To assess the mobility of the disabled. To design a stairway lift to aid mobility. | 100 from agency files | All in 12 major disability groups | Phone, personal interview | Questionnaire | Biography, employment and income status, trip behaviour, functional evaluation | Frequency Mode Purpose | Frequency Purpose | Yes | | Yes |
| Transportation Services for the Disabled Faculty of Social Work Carleton University | To evaluate the special transportation services presently available to Ottawa area. | 32 agencies representing 5,503 physically handicapped | Most; no breakdown except for those unable to "navigate" and those with agency representative independently | Phone, then personal interview with agency representative | Questionnaire, Cards | Funding source service cost client abilities system description | Frequency Mode Purpose | No | Average Trip Costs Only | | Yes |
| Transportation for the Handicapped Ottawa-Carleton DeLew Cather Ltd. | To collect information on the present mobility limitations and anticipated travel behaviour with improvements. | 5,000 questionnaires distributed, 900 returned | All | Media, mail, phone to attract respondents | Mailed questionnaire | Biography, nature of ailment, use of aids, trips | Mode Frequency Purpose | Mode Frequency Purpose | Yes | | Yes |
| Employment Transportation and The Handicapped Arthur D. Little Inc. U.S.A. for Health Education and Welfare | Assess occupational travel expenses, effect of transport availability and cost on employability. Evaluate tax deductions. | 250 from agency lists; 246 codable | 9 major groups of transportation handicap | Phone, personal interview | Questionnaire, Cards | Biographical data disability cause and history; use of aids. Performance assessment; transport experience; change in status. | Mode | Mode | Yes | 4 National Regions | Yes |
| Latent Demand for Transportation Carnegie-Mellon University, Pittsburgh, P.A. | To relate social, economic, and cultural needs to latent demand for transportation. | 100 Goodwill Industries Clients | 10 categories including mental retardation and nervous disorders | Personal interview by counsellors | Questionnaire | Use and availability of car Biographical data | Frequency Mode | Mobility Index | | | Yes |
| Data Collection Agency Handicapped Services DeLew Cather Ltd. London, Ontario | To assist the requirement for a separate transportation system specifically designed to meet the travel needs of handicapped. | 2,820 questionnaires for 7,800 people return % | All who felt they were disabled | 100% household mailing, post paid Media exposure | Mailed questionnaire Media | Cause of difficulty with bus. Importance of additional equipment. Present & future trip behaviour | Frequency Mode Purpose | Frequency Mode Purpose | Yes | No | No |

SURVEY METHODOLOGY AND APPROACH

In order to document the travel behaviour of the physically handicapped and their apparent needs in regards to transportation, three separate surveys were conducted. This appendix outlines the survey methodology and approach and provides copies of the questionnaires used (see Exhibit A-2).

SURVEY APPROACH

As shown in Exhibit A-1, a number of surveys relating to the transportation of the handicapped were reviewed prior to the design of the surveys for this study. Four of them which were particularly relevant from a questionnaire design standpoint are highlighted by an asterisk.

After careful consideration, it was decided that the best way to document travel behaviour barriers and future travel of the disabled would be to conduct personal interviews through a structured, partially open-ended questionnaire. Accordingly, a total of 292 interviews in Metro Toronto and 306 from five other Ontario cities of varying population sizes were conducted as two separate surveys with an almost identical questionnaire (with the subway question and origin/destination deleted from the other cities' survey).

The objective of the Metro Toronto and other cities surveys was to determine existing travel behaviour, and if certain improvements

were made to existing transportation services or new services added, to estimate their future travel behaviour. Thus, the surveys were designed to obtain data on existing and future travel demand.

A third survey, using a mail-out questionnaire, was designed to reach handicapped people from across the province and obtain a much larger data base of the travel behaviour of the physically handicapped. A total of 5,851 questionnaires were sent to physically handicapped people across the province, with a 36% usable replies.

The personal interview and mailed questionnaire were both pre-tested by interviewing physically handicapped individuals selected at random from major disability groups.

SELECTION OF COMMUNITIES

It was agreed initially with the MTC that Metro Toronto would be surveyed. In addition, up to five urban centres as well as Metropolitan Toronto were to be surveyed to obtain a range of city sizes. Twenty cities in total were initially contacted prior to selecting five, which were: Kingston, Sarnia, Thunder Bay, Timmins and Windsor. The criteria of selection included the following:

- Geographic location. The communities were to be reasonably representative of different regions in Ontario.
- Population size. The selected communities were to include population sizes of 50,000 and under, 50,000 to 150,000, 150,000 to 1,000,000, and Metro Toronto.

Ottawa-Carleton was excluded from consideration, since the MTC had helped sponsor another survey of the disabled transportation behaviour for that city. Results from that survey were available for our analysis.

INTERVIEWING PROCESS

A team of interviewers was hired on a part-time basis solely for the MTC surveys in both Metro and the other cities. In Metro an effort was made to hire the disabled, and of the 12 interviewers hired, seven were physically handicapped.

Transportation in many respects became a great problem for the physically handicapped interviewers. Some also found the physical demands of the job of an interviewer difficult. In addition, several of the handicapped hired were severely limited in their participation since they were already very active in a variety of community-oriented positions.

At the commencement of the interviewing, an interviewers' briefing was held for all interviewers in Metro Toronto, as well as briefing for the five other cities. The purpose of the survey, design, details of the questionnaire, as well as the approach to the interview were discussed. Interviewer turnover was relatively high, but each new interviewer received a thorough briefing.

The Metro Toronto survey was administered from the Toronto office of Peat, Marwick and Partners. In the other cities, a contact person in each city was hired to coordinate the survey team and carry out other research for the study. People already involved in the social services' field regarding the physically handicapped were hired for these purposes. In this way, the local coordinators were able to relate well to the organizations dealing with the physically handicapped in each city.

Once the organizations serving the disabled in Toronto made initial contact with the selected sample, the names were then sent to PMP. Each interviewer was given a number of people to call and make final arrangements for a time and place where they could meet and carry out the interview.

SAMPLE SELECTION

The sampling objective of the survey was to obtain a random sample of the disabled with transportation problems. In Metro Toronto there was emphasis on proportionate representation of major disability groups.

In the other cities' survey, the sample size within each city was too small to stratify by disability. The sampling objective, therefore, was to ensure that the sample was representative of the degrees of mobility problems, ranging from those in wheelchairs to those

simply with problems in using public transit. In the mail-out questionnaire survey, the objective was to obtain a random sample of respondents from provincial government disability benefits recipients. Each of the sampling procedures is discussed below.

Metropolitan Toronto

To reach all major disability groups all organizations serving the physically handicapped in Metro Toronto were compiled (see Exhibit A-2). These organizations were contacted and asked to estimate the number of disabled they served.

It was felt that the elderly would not be fully represented among the disability organizations. Therefore, we included the elderly institutional homes, since there was no other practical way of reaching the elderly handicapped.

Children were also believed to be underrepresented by the major disability organizations, since they are looked after by special organizations. Therefore, samples of physically and mentally handicapped children were taken from three separate Boards of Education - Scarborough, East York and Metro - as well as from the Ontario Society for Crippled Children, and Sunnyview School.

Some organizations serving the disabled were basically research- rather than service-oriented. Therefore, for some disability groups, it was necessary to obtain names from doctors and hospital special treatment units.

From these estimates, we calculated a sample size on the basis of a proportional number from each disability category. However, a minimum of ten respondents from each disability group was made part of the sample selection procedure. To obtain a random sample, a letter was sent to each of the organizations serving the disabled requesting their cooperation in interviewing the disabled with mobility problems (see Exhibit A-3 at the end of Appendix A). These letters were followed up by telephone calls requesting that the organization select a particular sample size based on our estimates of the proportion of the disabled that organization represented (see Exhibit A-4). The study team then verified that a random sample had been taken. The technique used by organizations to select a random sample was to have them go to the "nth" name on their membership roles or whatever other lists they had. Approximately 30% of those "nth" persons contacted refused to participate in the interview usually because they could not be contacted, or because they felt they had no mobility problems. In these instances, the next person on the list was approached.

The organization, through which these persons' names appeared on the list, would make the initial approach to the individual, thus avoiding any possible misunderstanding about the intentions of the survey. The organization officials making the contacts were also asked not to mention that this was specifically a transportation survey, but rather a general survey of the needs of the physically handicapped. This procedure was adopted to try to avoid any pre-determined bias prior to the interviews.

Other Cities

The sample selection in the five other cities differed from Metro Toronto's. The total sample from each city was too small to take meaningful samples of disabled people in proportion to the disability incidences. Therefore, the sample was drawn from several cooperating organizations stratified according to three mobility categories:

- those needing a special van, whether using it or not
- those not needing a special van but cannot use public transportation
- those who use public transportation without difficulty.

Equal representation of the physically handicapped was sought for each of these three groups. Otherwise, the same sampling procedures that were used in the Metro Toronto survey were applied in the other cities' survey.

Mail-Out Questionnaire

Four agencies involved with distribution of services and financial benefits to the handicapped were contacted to provide a sample of respondents. They were: Rehabilitation Foundation (a private agency with offices throughout the province), Workmen's Compensation Board, Family Benefits and Vocational Rehabilitation Branches of the Ministry of Community and Social Services. Agreement on procedures for sampling was reached with each agency as detailed below:

1. Rehabilitation Foundation:

- every 5th card was selected, including all those caseloads except Toronto's
- only those representative of a community of 10,000 or more were selected
- a total of 826 questionnaires were sent out from the Foundation
- a cover letter from the agency was attached to the questionnaires (see Exhibit A-5a at the end of Appendix A).

2. Workmen's Compensation Board:

- a computer sample was drawn at random from all those who were classified of being 25% or more disabled
- only those representative of a community of 10,000 or more were selected
- a total of 1,247 questionnaires were sent out from Workmen's Compensation Board
- a cover letter to the questionnaire was enclosed (see Exhibit A-5b).

3. Family Benefits Branch:

- random sample of those receiving disability pensions
- only those representative of a community of 10,000 or more
- a total of 2,121 questionnaires were sent out from Family Benefits
- a cover letter to the questionnaire was enclosed (see Exhibit A-5c).

4. Vocational Rehabilitation Branch:

- random sample from both Maintenance file and Vocational Rehabilitation file (Maintenance file includes those people receiving payments 50% of whom are mentally retarded; Rehabilitation file describes those who have requested benefits but do not receive them)

- only those representative of a community of 10,000 or more were selected
- a total of 1,657 questionnaires were sent out from Vocational Rehabilitation
- cover letter to questionnaire was sent out (see Exhibit A-5d).

The response rate of the 5,851 questionnaires that were mailed out is shown on Exhibit A-6 for each agency.

VALIDITY OF THE SAMPLE

There is no registry or accurate figures of disabled people with mobility problems in Ontario. Nor are there accurate breakdowns of different disability groups. Therefore, the universe of disabled with transportation problems can only be estimated, as explained in more detail in Chapter II.

The universe from which the sample was derived is shown as approximately 20,000 in Metro Toronto. This is lower than the estimated total in Metro Toronto, and, therefore, the surveyed sample was drawn from a universe that underrepresents the disabled in Metro Toronto.

In the five other cities, the approach to estimate the population size was the same - through the estimates of organizations serving the disabled. However, since the sample was structured according to mobility limitation, the universe was not as representative of disability groups as was that of Metro Toronto. A number of other sources

used were the Victorian Order of Nurses, Rehabilitation Foundation, and hospitals where the physically handicapped received therapy.

In view of the limitations in sample selection, it is difficult to make any estimates of statistical validity of the sample. Each of the three surveys has its sample limitations as discussed, although in each case representative samples were pursued as thoroughly as possible. However, the sample selection techniques appear to have been a substantial improvement over previous North American disabled survey experience, and the result is data which can be useful for planning purposes.

TORONTO PERSONAL INTERVIEW QUESTIONNAIRE

IDENTIFICATION CODE

| | | |
|---|---|---|
| 1 | 2 | 3 |
| | | |

CARD NUMBER

| |
|---|
| 4 |
| |

GEOGRAPHIC RESIDENCE

CODE

| | | |
|---|---|---|
| 5 | 6 | 7 |
| | | |

INTRODUCTION

If you recall, on the phone I told you I was working for the Ontario Government. I am going to ask you a few questions, which will help determine what improvements might be made for the residents of Ontario who are affected by some sort of physical disability.

1. How does your physical disability prevent you from doing things you would like to do? (LIST IN ORDER MENTIONED):

1. _____
2. _____
3. _____

DOES NOT LIMIT ME

2. Of the following statements, which best describes you in terms of mobility? (HAND CARD A) (RECORD ALL MENTIONS):

1. MUST STAY IN BED ALL OR MOST OF THE TIME 10-1
2. MUST STAY IN THE HOUSE ALL OR MOST OF THE TIME 10-2
3. NEED THE HELP OF ANOTHER PERSON IN GETTING AROUND 10-3
4. NEED THE HELP OF SOME SPECIAL AID, SUCH AS A CANE OR WHEELCHAIR 10-4
5. DO NOT NEED THE HELP OF ANOTHER PERSON OR SPECIAL AID BUT HAVE TROUBLE IN GETTING AROUND FREELY 10-5
6. NOT LIMITED IN ANY OF THE ABOVE WAYS 10-6

3(a) I am going to ask about the total amount of travelling you do for all reasons in the City now. Please tell me how many individual trips you take per week in the City. An individual trip is a trip in one direction between any two points.

1. 7 OR MORE INDIVIDUAL TRIPS PER WEEK 11-1
2. 3-6 INDIVIDUAL TRIPS PER WEEK 11-2 GO TO 3(b)
3. 1-2 INDIVIDUAL TRIPS PER WEEK 11-3
4. 1-3 INDIVIDUAL TRIPS PER MONTH 11-4 GO TO 3(c)
5. LESS THAN ONE TRIP PER MONTH 11-5
6. NEVER GO OUT 11-6 GO TO Q.11

(b) Now we would like to ask you a few questions about the trips you took during the last seven days. Please think about the last trip you took. Which day was that? (NOTE: ASK ABOUT ALL TRIPS DURING THE PREVIOUS SEVEN DAYS, FILL IN CHART 1).

| | |
|---|---|
| 8 | 9 |
| | |

| |
|----|
| 10 |
| |

| |
|----|
| 11 |
| |

(c) (NOTE: IF THE RESPONDENT HAS NOT TRAVELLED IN THE LAST SEVEN DAYS ASK THE SAME QUESTIONS AS 3(b) FOR THE LAST THREE TRIPS TAKEN AND FILL IN CHART 1)

(d) Now you have told me about the trips you took last week (or month). Would you say you travel less, about the same or more often in other seasons?

- 1. Less 12-1
- 2. About the same 12-2
- 3. More often 12-3

12

(e) (IF LESS OR MORE OFTEN) How many more (or fewer) trips would you take in other seasons?

13 14

4(a) Which statement on this card (HAND CARD B) best describes your current status?

- 1. I AM PRESENTLY EMPLOYED FULL TIME 15-1
- 2. I AM PRESENTLY EMPLOYED PART TIME 15-2
- 3. I AM PRESENTLY UNEMPLOYED, BUT COULD BE EMPLOYED 15-3
- 4. I AM RETIRED 15-4
- 5. I AM A STUDENT 15-5
- 6. I AM LOOKING AFTER THE HOUSE OR FAMILY 15-6
- 7. SOMETHING ELSE (SPECIFY) 15-7

GO TO Q. 4(b)

GO TO Q. 4(c)

GO TO Q. 4(e)

GO TO Q. 4(d)

GO TO Q. 4(c)

15

(b) Which of the following statements best describes your current status? (HAND CARD C)

- 1. ABLE TO WORK BUT LIMITED IN AMOUNT OF WORK OR KIND OF WORK 16-1
- 2. ABLE TO WORK BUT LIMITED IN KIND OR AMOUNT OF OTHER ACTIVITIES 16-2
- 3. NOT LIMITED IN ANY OF THESE WAYS 16-3

GO TO Q. 5(a)

16

(c) Which of the following statements best describes your current status? (HAND CARD D)

- 1. NOT ABLE TO TAKE PART AT ALL IN ANY SOCIAL, RECREATIONAL, SHOPPING OR OTHER LEIZURE ACTIVITIES 17-1
- 2. ABLE TO TAKE PART IN THE ABOVE ACTIVITIES BUT LIMITED IN THE KIND OR AMOUNT OF SUCH ACTIVITIES 17-2
- 3. NOT LIMITED IN ANY OF THESE WAYS 17-3

GO TO Q. 5(a)

17

(d) Which of the following statements best describes your current status? (HAND CARD E)

- 1. ABLE TO KEEP HOUSE BUT LIMITED IN AMOUNT OR KIND OF HOUSEWORK 18-1
- 2. ABLE TO KEEP HOUSE BUT LIMITED IN KIND OR AMOUNT OF OTHER ACTIVITIES 18-2
- 3. NOT LIMITED IN ANY OF THE ABOVE WAYS 18-3

GO TO Q. 5(a)

18

CHART 1

NOTE TO INTERVIEWER

RECORD THE APPROPRIATE ANSWERS FOR EACH TRIP. INSTRUCTIONS AND SUGGESTIONS FOR CATEGORIES FOLLOW IN PAGE 5.

| | | |
|--|--|--|
| | | |
| | | |

FILL IN TIME PERIOD

WEEK _____

OTHER _____

5 6 7

| | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> | <u>E</u> | <u>F</u> | <u>G</u> |
|----------|--|--------------------------------|--|--|---|---------------------|-----------------------|
| Trip No. | Where did this trip begin (nearest intersections?) | About what time did you start? | About how many minutes did the trip take door to door? | Where did the trip end (nearest intersection)? | What was (were) the purpose(s) of the trip? | How did you travel? | How much did it cost? |
| 1 | | AM PM | | | | | |
| 2 | | AM PM | | | | | |
| 3 | | AM PM | | | | | |
| 4 | | AM PM | | | | | |
| 5 | | AM PM | | | | | |
| 6 | | AM PM | | | | | |
| 7 | | AM PM | | | | | |
| 8 | | AM PM | | | | | |
| 9 | | AM PM | | | | | |
| 10 | | AM PM | | | | | |
| 11 | | AM PM | | | | | |
| 12 | | AM PM | | | | | |
| 13 | | AM PM | | | | | |

| | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> | <u>E</u> | <u>F</u> | <u>G</u> |
|----------|---|--------------------------------|--|--|---|---------------------|-----------------------|
| Trip No. | Where did this trip begin (nearest intersection)? | About what time did you start? | About how many minutes did the trip take door to door? | Where did the trip end (nearest intersection)? | What was (were) the purpose(s) of the trip? | How did you travel? | How much did it cost? |
| 14 | | AM | | | | | |
| | | PM | | | | | |
| 15 | | AM | | | | | |
| | | PM | | | | | |
| 16 | | AM | | | | | |
| | | PM | | | | | |
| 17 | | AM | | | | | |
| | | PM | | | | | |
| 18 | | AM | | | | | |
| | | PM | | | | | |
| 19 | | AM | | | | | |
| | | PM | | | | | |
| 20 | | AM | | | | | |
| | | PM | | | | | |
| 21 | | AM | | | | | |
| | | PM | | | | | |
| 22 | | AM | | | | | |
| | | PM | | | | | |
| 23 | | AM | | | | | |
| | | PM | | | | | |
| 24 | | AM | | | | | |
| | | PM | | | | | |
| 25 | | AM | | | | | |
| | | PM | | | | | |
| 26 | | AM | | | | | |
| | | PM | | | | | |
| 27 | | AM | | | | | |
| | | PM | | | | | |
| 28 | | AM | | | | | |
| | | PM | | | | | |

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

POSSIBLE ANSWERS - More detailed explanation in Interviewers Instructions.

- A. Record nearest intersection: e.g. Yonge and Eglinton
Warden and St. Clair
Bay and Bloor.
- B. What time of day did the trip take place: e.g. 8:15 a.m. round
each figure to nearest half hour?
- C. Count minutes from front door of origin to destination e.g.
15 minutes, 40 minutes, 50 minutes, 60 minutes.
- D. Record destination nearest intersection e.g. Bay and Bloor
Rogers Rd. and Eglinton.
- E. Trip Purpose: 1. Work
2. Education
3. Shopping or Personal Business
4. Leisure, Recreation, Visit Friends
5. Health Care
- F. Record their answers under one of these:
- | | |
|---|--|
| 1. Drove car myself. | 8. Took regular taxi. |
| 2. Drove adapted car or other vehicle myself. | 9. Took specially arranged taxi. |
| 3. Driven in car by a friend or relative. | 10. Took taxi paid for by an organization. |
| 4. Driven in car by volunteer or volunteer group. | 11. Took special van equipped to handle wheelchairs. |
| 5. Took bus sponsored by organization. | 12. Went by ambulance. |
| 6. Took TTC bus or streetcar. | 13. Took commuter train. |
| 7. Took subway or combination of bus streetcar and subway. | 14. Walked. |
- G. Record approximate cost: e.g. \$2.50
\$6.00
\$.30.

(e) Which of the following statements best describes your current status? (HAND CARD F)

- | | | | | | | |
|----|--|------|--------------------------|----------------|----|--------------------------|
| 1. | ABLE TO GO TO SCHOOL BUT LIMITED TO CERTAIN TYPES OF SCHOOLS OR IN FREQUENCY OF ATTENDANCE | 19-1 | <input type="checkbox"/> | } TO TO Q.5(a) | 19 | <input type="checkbox"/> |
| 2. | ABLE TO GO TO ANY TYPE OF SCHOOL BUT LIMITED IN OTHER ACTIVITIES | 19-2 | <input type="checkbox"/> | | 20 | <input type="checkbox"/> |
| 3. | NOT LIMITED IN ANY OF THE ABOVE WAYS | 19-3 | <input type="checkbox"/> | | 21 | <input type="checkbox"/> |

5(a) Are you actively looking for a job? YES NO
20-1 20-2

(b) (IF YES), what difficulties do you think you might have in finding a job?

- | | <u>FIRST MENTION</u> | <u>OTHER MENTIONS</u> | 21 | 22 |
|----|---|-------------------------------|-------------------------------|--------------------------|
| 1. | NO DIFFICULTY | 21-1 <input type="checkbox"/> | 22-1 <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | TRANSPORTATION REASONS (ECONOMIC AND OTHER) | 21-2 <input type="checkbox"/> | 22-2 <input type="checkbox"/> | <input type="checkbox"/> |
| 3. | NOT BEING ABLE TO AFFORD IT (WORKING) | 21-3 <input type="checkbox"/> | 22-3 <input type="checkbox"/> | <input type="checkbox"/> |
| 4. | PEOPLE'S ATTITUDES TOWARD THE DISABLED | 21-4 <input type="checkbox"/> | 22-4 <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | DIFFICULTIES IN GETTING INTO BUILDINGS | 21-5 <input type="checkbox"/> | 22-5 <input type="checkbox"/> | <input type="checkbox"/> |
| 6. | OTHER (SPECIFY) _____ | | | |

6. Now, how about shopping and personal business that you have to attend to outside your home. What do you consider the major reasons for you not going out to shop or to conduct personal business more frequently than you do now? (DO NOT READ LIST)

- | | <u>FIRST MENTION</u> | <u>OTHER MENTIONS</u> | 23 | 24 |
|----|---|-------------------------------|-------------------------------|--------------------------|
| 1. | TRANSPORTATION REASONS (ECONOMIC AND OTHER) | 23-1 <input type="checkbox"/> | 24-1 <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | NOT BEING ABLE TO AFFORD IT (SHOPPING, PERSONAL BUSINESS) | 23-2 <input type="checkbox"/> | 24-2 <input type="checkbox"/> | <input type="checkbox"/> |
| 3. | PEOPLE'S ATTITUDES TOWARD THE DISABLED | 23-3 <input type="checkbox"/> | 24-3 <input type="checkbox"/> | <input type="checkbox"/> |
| 4. | DIFFICULTIES IN GETTING INTO BUILDINGS | 23-4 <input type="checkbox"/> | 24-4 <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | OTHER (SPECIFY) _____ | | | |

7. Now, how about leisure activities like eating out, sports, entertainment, and visiting friends. What are the major reasons for you not participating in leisure activities more frequently than you do now? (DO NOT READ LIST)

- | | <u>FIRST MENTION</u> | <u>OTHER MENTIONS</u> | 25 | 26 |
|----|--|-------------------------------|-------------------------------|--------------------------|
| 1. | TRANSPORTATION REASONS (ECONOMIC AND OTHER) | 25-1 <input type="checkbox"/> | 26-1 <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | NOT BEING ABLE TO AFFORD IT (LEISURE ACTIVITIES) | 25-2 <input type="checkbox"/> | 26-2 <input type="checkbox"/> | <input type="checkbox"/> |
| 3. | PEOPLE'S ATTITUDES TOWARD THE DISABLED | 25-3 <input type="checkbox"/> | 26-3 <input type="checkbox"/> | <input type="checkbox"/> |
| 4. | DIFFICULTIES GETTING INTO BUILDINGS | 25-4 <input type="checkbox"/> | 26-4 <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | OTHER (SPECIFY) _____ | | | |

8. We now want to talk about different types of transportation, such as taxis, vans, and buses and subways. Here we are to talk about taxis which are a main source of transportation for many people. FILL IN THE BOXES APPROPRIATELY WITH NO PROMPTING.

(a) Do you use taxis?

1. Yes
27-1

2. No
27-2

27

(b) (If YES) Do you have any problems using taxis?

(c) (If NO) Why do you not use taxis?

23 29

9(a) Now what about commercial vans? By commercial vans we mean those specially equipped to accommodate wheelchairs. Do you use commercial vans?

1. Yes
30-1

2. No
30-2

30

(b) (If YES) Are there any problems using commercial vans?

(c) (If NO) Why do you not use commercial vans?

31 32

(c) Now, what about automobiles? Do you own or have access to an automobile you can drive regularly?

1. Yes
33-1

2. No
33-2

33

10(a) Now, about buses. Which one of the statements on this card best describes your ability to use a bus? (HAND CARD G)

| | <u>BUS</u> | | |
|--|------------|--------------------------|-----------------|
| 1. CAN USE WITH NO DIFFICULTY BUT ALWAYS USE OTHER MEANS OF TRANSPORTATION | 34-1 | <input type="checkbox"/> | } GO TO Q.10(d) |
| 2. I USE IT WITH NO DIFFICULTY | 34-2 | <input type="checkbox"/> | |
| 3. SOME DIFFICULTY BUT STILL CAN TRAVEL ALONE | 34-3 | <input type="checkbox"/> | } GO TO Q.10(b) |
| 4. USED TO DO IT BUT DO NOT ANYMORE | 34-4 | <input type="checkbox"/> | |
| 5. I CAN USE IT ONLY IF ACCOMPANIED | 34-5 | <input type="checkbox"/> | |
| 6. CANNOT USE AT ALL | 34-6 | <input type="checkbox"/> | |

(b) (IF CATEGORIES #4, #5, #6 in 10(a)). I am going to read a list of statements about difficulties some people have taking a bus. From your own experience tell me for each statement whether each is Very Difficult, Somewhat Difficult or Not At All Difficult to you.

| | <u>Very Difficult</u> | <u>Somewhat Difficult</u> | <u>Not at all Difficult</u> | |
|--|-------------------------------|-------------------------------|---------------------------------|-----------------------------|
| 1. Walking distance to and from bus stop | 35-1 <input type="checkbox"/> | 35-2 <input type="checkbox"/> | 35-3 <input type="checkbox"/> | 35 <input type="checkbox"/> |
| 2. Waiting time at bus stop | 36-1 <input type="checkbox"/> | 36-2 <input type="checkbox"/> | 36-3 <input type="checkbox"/> | 36 <input type="checkbox"/> |
| 3. Boarding and leaving bus | 37-1 <input type="checkbox"/> | 37-2 <input type="checkbox"/> | 37-3 <input type="checkbox"/> | 37 <input type="checkbox"/> |
| 4. Getting and out of seat | 38-1 <input type="checkbox"/> | 38-2 <input type="checkbox"/> | 38-3 <input type="checkbox"/> | 38 <input type="checkbox"/> |
| 5. Standing in a moving bus | 39-1 <input type="checkbox"/> | 39-2 <input type="checkbox"/> | 39-3 <input type="checkbox"/> | 39 <input type="checkbox"/> |
| 6. Overcrowding on bus | 40-1 <input type="checkbox"/> | 40-2 <input type="checkbox"/> | 40-3 <input type="checkbox"/> | 40 <input type="checkbox"/> |
| 7. Transferring between bus routes | 41-1 <input type="checkbox"/> | 41-2 <input type="checkbox"/> | 41-3 <input type="checkbox"/> | 41 <input type="checkbox"/> |
| 8. Knowing which bus to take and what stop to get off at | 42-1 <input type="checkbox"/> | 42-2 <input type="checkbox"/> | 42-3 <input type="checkbox"/> | 42 <input type="checkbox"/> |
| 9. Not having someone accompany me | 43-1 <input type="checkbox"/> | 43-2 <input type="checkbox"/> | 43-3 <input type="checkbox"/> | 43 <input type="checkbox"/> |

(c) Are there any other things you feel are difficulties in using the bus?

44

(d) Now, about subways. Which one of the statements on this card best describes your ability to use a subway? (HAND CARD G)

| | <u>SUBWAY</u> | |
|--|-------------------------------|-----------------|
| 1. CAN USE WITH NO DIFFICULTY BUT ALWAYS USE OTHER MEANS OF TRANSPORTATION | 45-1 <input type="checkbox"/> | } GO TO Q.11 |
| 2. I USE IT WITH NO DIFFICULTY | 45-2 <input type="checkbox"/> | |
| 3. SOME DIFFICULTY BUT STILL CAN TRAVEL ALONE | 45-3 <input type="checkbox"/> | } GO TO Q.10(e) |
| 4. USED TO USE IT BUT DO NOT ANYMORE | 45-4 <input type="checkbox"/> | |
| 5. I CAN USE IT ONLY IF ACCOMPANIED | 45-5 <input type="checkbox"/> | |
| 6. CANNOT USE AT ALL | 45-6 <input type="checkbox"/> | |

45

(e) Now how about these problems for the subway. Again tell me which are Very Difficult, Somewhat Difficult, or Not At All Difficult (IF RESPONDENT ANSWERED #4, #5, OR #6 ABOVE)

| | <u>Very Difficult</u> | <u>Somewhat Difficult</u> | <u>Not at all Difficult</u> |
|------------------------------------|-------------------------------|-------------------------------|---------------------------------|
| 1. Getting to and from subway | 46-1 <input type="checkbox"/> | 46-2 <input type="checkbox"/> | 46-3 <input type="checkbox"/> |
| 2. Getting down to the subway | 47-1 <input type="checkbox"/> | 47-2 <input type="checkbox"/> | 47-3 <input type="checkbox"/> |
| 3. Boarding and leaving the subway | 48-1 <input type="checkbox"/> | 48-2 <input type="checkbox"/> | 48-3 <input type="checkbox"/> |
| 4. Getting in and out of seat | 49-1 <input type="checkbox"/> | 49-2 <input type="checkbox"/> | 49-3 <input type="checkbox"/> |
| 5. Standing in a moving subway car | 50-1 <input type="checkbox"/> | 50-2 <input type="checkbox"/> | 50-3 <input type="checkbox"/> |
| 6. Overcrowding on subway | 51-1 <input type="checkbox"/> | 51-2 <input type="checkbox"/> | 51-3 <input type="checkbox"/> |
| 7. Transferring to or from a bus | 52-1 <input type="checkbox"/> | 52-2 <input type="checkbox"/> | 52-3 <input type="checkbox"/> |
| 8. Not having someone accompany me | 53-1 <input type="checkbox"/> | 53-2 <input type="checkbox"/> | 53-3 <input type="checkbox"/> |

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(f) Are there any other things you feel are difficulties in using the subway?

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11. Some handicapped people have told us that the reason they do not travel more often is because of people's attitude towards them. From your point of view, tell me whether you agree or disagree with the following statements:

| | <u>AGREE</u> | <u>DISAGREE</u> |
|--|-------------------------------|-------------------------------|
| 1. The handicapped are an inconvenience to others | 55-1 <input type="checkbox"/> | 55-2 <input type="checkbox"/> |
| 2. People make the handicapped feel uncomfortable | 56-1 <input type="checkbox"/> | 56-2 <input type="checkbox"/> |
| 3. People are generally uncooperative toward the handicapped | 57-1 <input type="checkbox"/> | 57-2 <input type="checkbox"/> |
| 4. Bus and taxi drivers are uncooperative toward the handicapped | 58-1 <input type="checkbox"/> | 58-2 <input type="checkbox"/> |

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FUTURE TRAVEL BEHAVIOUR

I would now like to ask you a few questions about how your travel might change if some improvements were to be made to certain types of transportation.

- 12(a) Which of the following improvements in service would be most important to make it easier for you to travel? (HAND CARD H) ARE THERE ANY OTHERS?

| | <u>FIRST MENTION</u> | <u>OTHER MENTIONS</u> |
|--|-------------------------------|-------------------------------|
| 1. REDUCED RATES FOR SPECIAL EQUIPMENT (LIKE HAND CONTROLS) IN AUTOMOBILES | 59-1 <input type="checkbox"/> | <input type="checkbox"/> 60-1 |
| 2. NO SPECIAL IMPROVEMENT IS NECESSARY | 59-2 <input type="checkbox"/> | <input type="checkbox"/> 60-2 |
| 3. IMPROVEMENTS IN THE BUS SYSTEM | 59-3 <input type="checkbox"/> | <input type="checkbox"/> 60-3 |
| 4. IMPROVEMENTS IN THE SUBWAY SYSTEM | 59-4 <input type="checkbox"/> | <input type="checkbox"/> 60-4 |
| 5. A LOWER COST DOOR-TO-DOOR SERVICE WITH SPECIALLY DESIGNED VEHICLES | 59-5 <input type="checkbox"/> | <input type="checkbox"/> 60-5 |
| 6. LOWER TAXI FARES | 59-6 <input type="checkbox"/> | <input type="checkbox"/> 60-6 |

59 60

- (b) IF #5 OR #6 SELECTED ASK THE FOLLOWING:

If the service that you felt was most important were available at a fare of \$.30 per trip, how many additional trips per week would you take for the following purposes? (WRITE IN FIGURE)

| | | |
|--------------------------------|-------|-------|
| Work | _____ | 61 62 |
| Education | _____ | 63 64 |
| Shopping and Personal Business | _____ | 65 66 |
| Leisure and Recreation | _____ | 67 68 |
| Health Care | _____ | 69 70 |

(c) IF #5 OR #6 SELECTED ASK THE FOLLOWING:

If the service that you felt was most important were available at a fare of \$2.00 per trip, how many additional trips per week would you take for the following purposes? (WRITE IN FIGURE)

| | | | |
|--------------------------------|-------|----------------------|----------------------|
| Work | _____ | 71 | 72 |
| | | <input type="text"/> | <input type="text"/> |
| Education | _____ | 73 | 74 |
| | | <input type="text"/> | <input type="text"/> |
| Shopping and Personal Business | _____ | 75 | 76 |
| | | <input type="text"/> | <input type="text"/> |
| Leisure and Recreation | _____ | 77 | 78 |
| | | <input type="text"/> | <input type="text"/> |
| Health Care | _____ | 79 | 80 |
| | | <input type="text"/> | <input type="text"/> |

CARD B (Keypunch Only)

(d) IF #3 OR #4 SELECTED ASK THE FOLLOWING:

If the service that you felt was most important were available at the present fare, how many additional trips per week would you take for what purposes? (WRITE IN FIGURE)

| | | | | |
|--------------------------------|-------|----------------------|----------------------|----------------------|
| | | 1 | 2 | 3 |
| | | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | | 4 | | |
| | | B | | |
| | | 5 | 6 | 7 |
| | | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Work | _____ | 8 | 9 | |
| | | <input type="text"/> | <input type="text"/> | |
| Education | _____ | 10 | 11 | |
| | | <input type="text"/> | <input type="text"/> | |
| Shopping and Personal Business | _____ | 12 | 13 | |
| | | <input type="text"/> | <input type="text"/> | |
| Leisure and Recreation | _____ | 14 | 15 | |
| | | <input type="text"/> | <input type="text"/> | |
| Health Care | _____ | 16 | 17 | |
| | | <input type="text"/> | <input type="text"/> | |

(e) What would be the main purpose of your increased travel if the improvements you suggested were made? _____

18

13(a) What do you feel would be a reasonable charge per ride for taxi rides and a special door-to-door service for physically handicapped persons? (DO NOT READ LIST)

| | | TAXI RIDES | SPECIAL DOOR-TO-DOOR SERVICE | 19 | 20 |
|----|---------------------------|-------------------------------|------------------------------------|--------------------------|--------------------------|
| 1. | 30¢ OR LESS PER RIDE | 19-1 <input type="checkbox"/> | 20-1 <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | 31¢ TO 50¢ PER RIDE | 19-2 <input type="checkbox"/> | 20-2 <input type="checkbox"/> | | |
| 3. | 51¢ TO \$1.00 PER RIDE | 19-3 <input type="checkbox"/> | 20-3 <input type="checkbox"/> | | |
| 4. | \$1.01 TO \$1.50 PER RIDE | 19-4 <input type="checkbox"/> | 20-4 <input type="checkbox"/> | | |
| 5. | \$1.51 TO \$2.00 PER RIDE | 19-5 <input type="checkbox"/> | 20-5 <input type="checkbox"/> | | |
| 6. | \$2.01 TO \$3.00 PER RIDE | 19-6 <input type="checkbox"/> | 20-6 <input type="checkbox"/> | | |
| 7. | MORE THAN \$3.00 PER RIDE | 19-7 <input type="checkbox"/> | 20-7 <input type="checkbox"/> | | |
| 8. | OTHER (SPECIFY) | 19-8 <input type="checkbox"/> | 20-8 <input type="checkbox"/> | | |
| 9. | DON'T KNOW | 19-9 <input type="checkbox"/> | 20-9 <input type="checkbox"/> | | |

(b) Should the fare you suggest vary according to how far you travel?
 YES 21-1 NO 21-2 21

(c) Should the fare you suggest vary according to the time of day you travel?
 YES 22-1 NO 22-2 22

14(a) There are a number of ways of improving the bus, streetcar, and the subway systems. As I read this list, please tell me whether you feel each is Very Important, Somewhat Important, or Not at All Important to you.

| | | Very Important | Somewhat Important | Not At All Important | |
|----|---|-------------------------------|-------------------------------|-------------------------------|----|
| 1. | Better information about the public transportation system and the stops and schedules | 23-1 <input type="checkbox"/> | 23-2 <input type="checkbox"/> | 23-3 <input type="checkbox"/> | 23 |
| 2. | Special seats on buses and subways for physically handicapped | 24-1 <input type="checkbox"/> | 24-2 <input type="checkbox"/> | 24-3 <input type="checkbox"/> | 24 |
| 3. | Hand rails at entrances and exits of buses | 25-1 <input type="checkbox"/> | 25-2 <input type="checkbox"/> | 25-3 <input type="checkbox"/> | 25 |
| 4. | More vertical grab-bars in buses and subways | 26-1 <input type="checkbox"/> | 26-2 <input type="checkbox"/> | 26-3 <input type="checkbox"/> | 26 |
| 5. | More shelters | 27-1 <input type="checkbox"/> | 27-2 <input type="checkbox"/> | 27-3 <input type="checkbox"/> | 27 |
| 6. | More seats at bus stops | 28-1 <input type="checkbox"/> | 28-2 <input type="checkbox"/> | 28-3 <input type="checkbox"/> | 28 |

(b) If these improvements were made, how many additional trips would you make per week by subway and bus?
 (WRITE IN FIGURE) 29 30

(c) Please tell me again whether you feel each of the following items is Very Important, Somewhat Important, or Not at All Important to you.

| | Very Important | Somewhat Important | Not At All Important |
|---|-------------------------------|-------------------------------|-------------------------------|
| 1. Lower steps on buses | 31-1 <input type="checkbox"/> | 31-2 <input type="checkbox"/> | 31-3 <input type="checkbox"/> |
| 2. Loading device for wheelchairs | 32-1 <input type="checkbox"/> | 32-2 <input type="checkbox"/> | 32-3 <input type="checkbox"/> |
| 3. Up-escalators at all subway stations | 33-1 <input type="checkbox"/> | 33-2 <input type="checkbox"/> | 33-3 <input type="checkbox"/> |
| 4. Down-escalators at all subway stations | 34-1 <input type="checkbox"/> | 34-2 <input type="checkbox"/> | 34-3 <input type="checkbox"/> |
| 5. Elevators at all subway stations | 35-1 <input type="checkbox"/> | 35-2 <input type="checkbox"/> | 35-3 <input type="checkbox"/> |

31

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(d) If these improvements were made, how many additional trips would you make per week by subway and bus?

(WRITE IN FIGURE) _____

36 37

(e) Do you have any other suggestions for improvements that might be made to the bus or subway?

38

INTER-CITY TRAVEL

15(a) Now all along we have been talking about travelling in the city. How often do you travel outside the city per month? (FOR THIS QUESTION COUNT ROUND TRIPS AS ONE TRIP)

- 1. THREE OR MORE TIMES PER MONTH 39-1
- 2. ONE TO THREE TIMES PER MONTH 39-2
- 3. LESS THAN ONCE PER MONTH 39-3
- 4. NEVER 39-5 GO TO Q.15(c)

39

(b) What is the main type of vehicle you use when travelling out of the city? Do not include your transportation to or from the station or terminal to connect with the main transportation (DO NOT READ LIST).

- 1. CAR 40-1
- 2. BUS 40-2
- 3. TRAIN 40-3
- 4. PLANE 40-4
- 5. COMBINATION (SPECIFY) 40-5

40

(c) What is your greatest problem in travelling outside the city?

41

DEMOGRAPHIC DATA

16 Just so we can better group our respondents, I would like to ask a few personal questions. First of all, would you please tell me the letter on this card that best corresponds to your age and your total family income? (HAND RESPONDENT CARD 1)

| | | | | |
|----------------|-----------------------|------|--------------------------|--------------------------|
| <u>AGE:</u> | A. UNDER 19 YEARS | 42-1 | <input type="checkbox"/> | 42 |
| | B. 19 - 30 YEARS | 42-2 | <input type="checkbox"/> | <input type="checkbox"/> |
| | C. 31 - 45 YEARS | 42-3 | <input type="checkbox"/> | |
| | D. 46 - 65 YEARS | 42-4 | <input type="checkbox"/> | |
| | E. OVER 65 YEARS | 42-5 | <input type="checkbox"/> | |
| <u>INCOME:</u> | K. LESS THAN \$1,000 | 43-1 | <input type="checkbox"/> | 43 |
| | L. \$1,000 - \$3,000 | 43-2 | <input type="checkbox"/> | <input type="checkbox"/> |
| | M. \$3,000 - \$5,000 | 43-3 | <input type="checkbox"/> | |
| | N. \$5,000 - \$10,000 | 43-4 | <input type="checkbox"/> | |
| | O. \$10,000 OR MORE | 43-5 | <input type="checkbox"/> | |

17(a) What would you record as your major disability? DO NOT READ LIST, CHECK APPROPRIATE ANSWERS. RECORD ALL MENTIONS. 44 45 46 47

- | | |
|------------------------------|-------------------------------------|
| a) AMPUTATION OF ARM _____ | k) MULTIPLE SCLEROSIS _____ |
| b) AMPUTATION OF LEG _____ | l) STROKES _____ |
| c) VISUAL IMPAIRMENTS _____ | m) PARAPLEGIA OR QUADRAPLEGIA _____ |
| d) HEARING IMPAIRMENTS _____ | n) BACK/SPINE IMPAIRMENTS _____ |
| e) CYSTIC FIBROSIS _____ | o) ARM IMPAIRMENTS _____ |
| f) RESPIRATORY DISEASE _____ | p) LEG IMPAIRMENTS _____ |
| g) RHEUMATOID ARTH. _____ | q) EPILEPSY _____ |
| h) RHEUMATISM _____ | r) MUSCULAR DYSTROPHY _____ |
| i) HEART CONDITION _____ | s) HEMOPHILIA _____ |
| j) CEREBRAL PALSY _____ | t) OTHER (SPECIFY) _____ |

ALPHA

(b) How many years have you had your disability? (WRITE IN NUMBER OF YEARS) 48 49

18. What aids to you use in your everyday activities? (DO NOT READ LIST) 50 51 52 53

- | | |
|-------------------------|--------------------------------|
| 1. WHEELCHAIR _____ | 6. PROSTHETIC APPLIANCE: _____ |
| 2. CANE(S) _____ | 7. UPPER BODY _____ |
| 3. CRUTCH(ES) _____ | 8. LOWER BODY _____ |
| 4. WHITE CANE _____ | 9. HEARING AID _____ |
| 5. SEEING-EYE DOG _____ | 9. OTHER _____ (SPECIFY) |

19(a) Who are the people you live with? (DO NOT READ LIST)

| | | | |
|--------------------------------|------|--------------------------|----|
| 1. LIVE ALONE | 54-1 | <input type="checkbox"/> | |
| 2. WITH PARENTS OR RELATIVES | 54-2 | <input type="checkbox"/> | |
| 3. LIVE WITH FRIENDS | 54-3 | <input type="checkbox"/> | |
| 4. WITH OWN FAMILY | 54-4 | <input type="checkbox"/> | |
| 5. IN RESIDENCE OR INSTITUTION | 54-5 | <input type="checkbox"/> | 54 |

(b) Do you have any dependents?

YES 55-1

NO 55-2

55

56

INTERVIEWER TO COMPLETE THE FOLLOWING:

Place of Interview _____

Date of Interview _____

Respondent Name _____

Respondent Address _____

Telephone Number _____

Organization Identifying Respondent _____

Length of Interview _____

Signature of Interviewer _____

Comments about how the interview went (if appropriate) _____

ONTARIO MINISTRY OF TRANSPORTATION AND COMMUNICATIONS
 QUESTIONNAIRE RE:
 TRANSPORTATION PROBLEMS OF THE DISABLED

INSTRUCTIONS - There is very little writing involved. Just check the boxes under the questions as they apply to you. For example

PLEASE DO NOT
 WRITE IN
 THIS SPACE

How old are you?

- | | |
|--|--|
| 1. <input type="checkbox"/> Under 19 years | 4. <input checked="" type="checkbox"/> 46-64 years |
| 2. <input type="checkbox"/> 19-30 years | 5. <input type="checkbox"/> Over 65 years |
| 3. <input type="checkbox"/> 31-45 years | |

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | | | | |

QUESTIONS ABOUT YOU

1. In what city do you live? _____
2. Sex: Male Female
3. How old are you?
 1. Under 19 years
 2. 19-30 years
 3. 31-45 years
 4. 46-64 years
 5. 65 years and over
4. What is your total annual family income? (NOTE: All answers to this and other questions are strictly confidential)
 1. Less than \$1,000
 2. \$1,001 - \$3,000
 3. \$3,001 - \$5,000
 4. \$5,001 - \$10,000
 5. \$10,001 or over
5. What are your disabilities? (Please check more than one box if you have more than one disability)

| | | |
|---|---|---|
| 6 | 7 | 8 |
| | | |

| |
|----|
| 9 |
| |
| 10 |
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|----|----|----|----|
| 11 | | | |
| | | | |
| 12 | 13 | 14 | 15 |
| | | | |

- | | |
|--|---|
| 10. <input type="checkbox"/> Amputation of arm | 21. <input type="checkbox"/> Strokes |
| 11. <input type="checkbox"/> Amputation of leg | 22. <input type="checkbox"/> Paraplegia or Quadraplegia |
| 12. <input type="checkbox"/> Visual impairments | 23. <input type="checkbox"/> Back/spine impairments |
| 13. <input type="checkbox"/> Hearing impairments | 24. <input type="checkbox"/> Arm impairments |
| 14. <input type="checkbox"/> Mental impairments | 25. <input type="checkbox"/> Multiple Sclerosis |
| 15. <input type="checkbox"/> Cystic Fibrosis | 26. <input type="checkbox"/> Leg impairments |
| 16. <input type="checkbox"/> Respiratory impairments | 27. <input type="checkbox"/> Epilepsy |
| 17. <input type="checkbox"/> Rheumatoid Arthritis | 28. <input type="checkbox"/> Muscular Dystrophy |
| 18. <input type="checkbox"/> Rheumatism | 29. <input type="checkbox"/> Hemophilia |
| 19. <input type="checkbox"/> Heart condition | 30. <input type="checkbox"/> Polio |
| 20. <input type="checkbox"/> Cerebral Palsy | 31. <input type="checkbox"/> Other (Specify) _____ |

| | | | |
|----|----|----|----|
| 16 | 17 | 18 | 19 |
| | | | |

6. How long have you had your disability?
 1. Less than 1 year
 2. 1-5 years
 3. 6-10 years
 4. Over 10 years
 5. Since birth

| | | | |
|----|----|----|----|
| 20 | | | |
| | | | |
| 21 | 22 | 23 | 24 |
| | | | |

7. What type of special equipment do you use? (Please check more than one box if you use more than one special equipment)

- | | |
|--|--|
| 1. <input type="checkbox"/> None | 7. <input type="checkbox"/> Prosthetic Device (Upper Body) |
| 2. <input type="checkbox"/> Wheelchair | 8. <input type="checkbox"/> Prosthetic Device (Lower Body) |
| 3. <input type="checkbox"/> Canes | 9. <input type="checkbox"/> Hearing Aid |
| 4. <input type="checkbox"/> Crutches | 10. <input type="checkbox"/> Other (Specify) _____ |
| 5. <input type="checkbox"/> White Cane | |
| 6. <input type="checkbox"/> Seeing Eye Dog | |

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

8. Please check the box that best describes your situation:

- 1. I can take local buses with no difficulty in spite of my disability.
- 2. I can take local buses, but only with difficulty because of my disability.
- 3. I cannot take local buses because of my disability but can be driven by taxi or by family or friends, or drive myself.
- 4. There is no bus system in my community, and I usually am driven by taxi or by family or friends, or drive myself.
- 5. Because of my disability, the most convenient way to travel is by a special vehicle that can accommodate wheelchairs.

25

QUESTIONS ABOUT THE LOCAL BUSES

9.a) Do you use the local bus system?

- 1. Yes
- 2. No
- 3. No bus system exists locally.

26

b) IF NO, why not? (check all that apply to you)

- 1. Physical disability prevents use of local bus system
- 2. I use taxis or automobiles instead
- 3. I cannot afford local buses
- 4. I am uneasy in crowds
- 5. Other (Please specify) _____

27 28 29

30 31

c) IF YES, do you have problems with the local bus system because of your disability?

- 1. No problems
- 2. Walking distance to bus stop
- 3. Waiting time at bus stop
- 4. Boarding and leaving bus (I have difficulty with the steps)
- 5. Standing on a moving bus
- 6. Overcrowding on a bus
- 7. Transferring between bus lines
- 8. Drivers are uncooperative
- 9. Other (Please specify) _____

32 33 34

35 36 37

38 39 40

QUESTIONS ABOUT TAXIS

10.a) Do you use taxis? Yes No

41

b) IF NO, why don't you use taxis? (check those that apply)

- 1. Don't need to take taxis
- 2. Physically unable to use taxis
- 3. Too expensive
- 4. Drivers are uncooperative
- 5. Other (Please specify) _____

42 43 44

45 46

c) IF YES, do you have problems? (check those that apply)

- 1. No problems
- 2. Problems getting in and out of taxis
- 3. Too expensive
- 4. Drivers are uncooperative
- 5. Other (Please specify) _____

47 48 49

50 51

PLEASE DO NOT
WRITE IN
THIS SPACE

QUESTIONS ABOUT CARS

11.a) Do you have a driver's license?

Yes No

52

b) Did you ever have a driver's license?

Yes No

53

c) Sometimes cars can be adapted for use by the disabled. Would you be interested in learning to drive such a car?

1. Would be interested
2. Would not be interested
3. Could not drive even a specially equipped car
4. Too young to drive

54

d) Do you have a friend or someone in your family who can drive you regularly?

Yes No

55

QUESTIONS ABOUT WHEELCHAIR VANS

12.a) Do you use a special transportation vehicle that can carry wheelchairs?

Yes No

56

b) IF NO, why do you not use a special vehicle? (check those that apply)

1. Don't need special vehicle
2. Service does not exist in my community
3. Service exists, but is too expensive
4. Physically unable to use special service
5. Drivers are uncooperative
6. Other (Please specify) _____

57 58 59

60 61 62

c) IF YES, do you have problems in using a special vehicle because of your disability? (check those that apply)

1. No problems
2. I have problems getting in and out of vehicles
3. Too expensive
4. Drivers are uncooperative
5. Service is not provided as often as I need it
6. Other (Please specify) _____

63 64 65

66 67 68

QUESTIONS ABOUT TRAVEL YOU NOW DO

13.a) How much do you spend per month on transportation?
(include auto expenses if you have one)

1. \$0 - \$15
2. \$16 - \$30
3. \$31 - \$45
4. \$46 - \$60
5. Over \$60

69

b) Are you now receiving government assistance specifically for transportation?

Yes No

70

c) Does some organization besides government pay part of your travel costs?

Yes No

71

14. How many trips have you taken in the last seven days? (NOTE: A round trip to and from work counts as two trips in this section)

- 1. No Trips in Last Seven Days
- 2. 1 to 2 Trips
- 3. 3 to 6 Trips
- 4. 7 or More Trips

72

15. Now, please list in the box below all the trips that you have taken in the last three days (starting with yesterday as the first day).

EXAMPLE - Yesterday (Monday), you took a taxi to go shopping, and a taxi to come home. Then you took a bus to visit a friend and he drove you home. This day's trips would then be entered as four trips, taken on Monday, one shopping, one social, and two return home trips. To do this, you took two taxi, one bus, and one auto passenger trip. (Remember, a round trip counts as two trips). Do this for the last three days, starting with yesterday.

| TRIP NUMBER | DAY OF THE WEEK | WHAT WAS THE MAIN PURPOSE OF YOUR TRIP ? | | | | | | | | HOW HAVE YOU TRAVELLED? | | | | |
|-------------|-----------------|--|------|----------|-------------------|-----------|------------|--------|-------------|-------------------------|-------------------|---------|-------------------|--------|
| | | THERAPY OR MEDICAL | WORK | SHOPPING | PERSONAL BUSINESS | EDUCATION | RECREATION | SOCIAL | RETURN HOME | AS AUTO DRIVER | AS AUTO PASSENGER | BY TAXI | BY WHEELCHAIR VAN | BY BUS |
| 1 | MONDAY | | | ✓ | | | | | | | | ✓ | | |
| 2 | MONDAY | | | | | | | | ✓ | | | ✓ | | |
| 3 | MONDAY | | | | | | | ✓ | | | | | | ✓ |
| 4 | MONDAY | | | | | | | | ✓ | ✓ | | | | |
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PLEASE
FILL IN
TABLE
FOR THE
LAST
THREE
DAYS

THANK YOU FOR YOUR HELP

16. This section is provided so that you may list any problems you have with the transportation system in your area, or any general comments you would care to make. (Use an additional page if necessary)

73 74 75 76

| | | | |
|--|--|--|--|
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|--|--|--|--|

77 78 79 80

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| | | | |
|--|--|--|--|

November 27, 1973

TO: Organizations Serving the
Physically Handicapped in Toronto

FROM: Mr. Peter Lyman
Kates, Peat, Marwick & Co.

SUBJECT: Interviews of Physically Handicapped for Provincial Government

The firm of Kates, Peat, Marwick & Co. has been contacted by the Provincial Ministry of Transportation and Communications (MTC) to undertake a planning assignment of transportation services for the physically handicapped throughout the Province. Mr. Gerald Clarke has been retained by KPM&Co. to assist in this project.

MTC's study should be distinguished from that of the Metropolitan Transportation Plan Review (MTTPR) for whom KPM&Co. is also undertaking a planning study. The work we are doing for the MTTPR is oriented toward immediate, short-term solutions for Toronto's problems, and is being done in cooperation with the TTC's planning of a pilot project.

To ensure that future transportation services are well planned, we are conducting personal interviews of physically handicapped people in Toronto and elsewhere to determine their particular transportation problems and needs. To ensure that the interviews represent a cross-section of the physically handicapped, we want to interview physically handicapped people of every major disability group.

The only feasible way of reaching a representative sample of physically handicapped is through organizations serving the physically handicapped in the city. Therefore, KPM&Co. and the Ministry of Transportation and Communications is asking for your assistance in identifying and contacting people to interview. Sensitive to the fact that in some respects handicapped people have been over-interviewed, we would also prefer to have representatives of organizations serving the physically handicapped initially contact prospective interviewees.

The selection of those to be interviewed should be as random as possible from each disability group. Furthermore, when arranging an interview,

it is important not to specify that the purpose is to identify transportation problems, since this might telegraph answers to the first series of questions. We want to obtain as objective information as possible from these interviews.

Following the series of interviews, organizations serving the physically handicapped would be asked to review the result for that disability group. In this way, we can better assess whether these results are an accurate reflection of the travel behaviour of physically handicapped people in that group.

This briefly summarizes our request to you, and further arrangements should be made with Gerry Clarke and Ms. Lynn Frankel of KPM&Co. We expect to complete the interview questions, initial testing, and making arrangements with individual organizations before the holiday season, and begin interviewing in January 1974.

Peter Symon

EXHIBIT A-4

| Disability and Source | Sample Size |
|---|-------------|
| Arthritic and Rheumatic Sufferers (samples taken from two major hospitals) | 27 |
| Heart Sufferers (samples taken from four hospitals) | 25 |
| Strike Sufferers (samples taken from Sunnybrook Hospital) | 8 |
| CNIB | 10 |
| Hearing Impairments (samples taken from Canadian Hearing Society and Ontario Mission for the Deaf) | 10 |
| Canadian Cancer Society | 7 |
| Muscular Dystrophy Association | 11 |
| Multiple Sclerosis Society | 10 |
| Ontario Society for Crippled Children | 13 |
| Remainder of Schoolchildren (samples taken from three School Boards) | 13 |
| Senior Citizens (two Homes for the Aged, two Nursing Homes, two Senior Citizens' Apartments) | 45 |
| Cerebral Palsy Association (Bellwoods Park House) | 11 |
| Canadian Paraplegic Association (Syndhurst Lodge) | 5 |
| Department of Veterans Affairs | 9 |
| Meals-on-Wheels (samples from three Meals-on-Wheels distributors) | 12 |
| Tuberculosis and Respiratory Sufferers (samples from three chest clinics in three major hospitals) | 34 |
| Mentally Retarded (samples from one workshop, one school, and one mentally retarded residence) | 21 |
| Canadian Parkinson's Foundation | 8 |
| Spina Bifida Association | 4 |
| Metropolitan Toronto Chapter, Ontario Epilepsy Assoc. | 10 |
| Total: | 292 |

THE WORKMEN'S COMPENSATION BOARD

90 HARBOUR STREET, TORONTO 117, ONTARIO TELEPHONE 362-3411 AREA CODE 416



Dear Sir/Madam:

The Ontario Ministry of Transportation and Communications (MTC) has asked us (through their consultants, Kates, Peat, Marwick & Co.) to cooperate in sending you a questionnaire. The Ministry wants to use the answers to improve transportation for the physically handicapped.

The questionnaire has been designed for those persons who have difficulty in using the bus (public transit) system in their area because of their physical handicap.

Your assistance in answering all the questions as best you can will help us and the Ministry of Transportation and Communications understand transportation problems of the physically handicapped, so your cooperation is important.

The return envelope provided does not need a postage stamp. Just answer the questions and put the questionnaire in the attached envelope. It will then be directed to the Ministry of Transportation and Communications.

Yours truly,

A.G. MacDonald,
Vice Chairman of Administration.



Ontario

Ministry of
Community and
Social
Services

965-2376

Rehabilitation Services
4th Floor, Hepburn Blk.
Parliament Buildings
Toronto M7A 1G6
March 5, 1974

Dear Sir/Madam:

The Ontario Ministry of Transportation and Communications has asked the Rehabilitation Bureau to cooperate in sending you the enclosed questionnaire. The Ministry hopes to use the information obtained from the questionnaire to plan improved transportation for the physically disabled.

The questionnaire has been designed for those persons, who, because of physical disability, have difficulty in using public transit service in their area. If you have no physical disability and you have no difficulties with transportation, you need not fill in the questionnaire.

Your assistance in answering all the questions as best you can will help the Ministry of Transportation and Communications as well as other Ministries better understand the transportation problems of the physically disabled.

You may mail the questionnaire in the attached envelope. No postage stamp is required.

Yours truly,

A handwritten signature in cursive script that reads "Herbert A. Sohn".


HAS/sf

Herbert A. Sohn,
Director.

MARCH OF DIMES



DISABILITY FUND



8th March, 1974

Hello:

The Ontario Ministry of Transportation and Communications (MTC) has asked us (through their consultants, Kates Peat Marwick & Co.) to co-operate in sending you a questionnaire. The Ministry wishes to use the answers to improve transportation for the physically disabled.

The questionnaire has been designed for those persons who have difficulty in using the bus (public transit) system in their area because of their physical disability.

Your assistance in answering all the questions to the best of your abilities will help us and the Ministry of Transportation and Communications understand the transportation problems of the physically disabled. So your co-operation is important.

The return envelope does not need a stamp. Just answer the questionnaire and place it in the enclosed envelope. It will then be directed to the Ministry of Transportation and Communications.

We do appreciate your assistance.

Sincerely,

Jane Szilvassy

Jane Szilvassy (Mrs)
Coordinator of Casework and Camping

JS:ls
Encs.



Serving Ontario's Adult Handicapped
Rehabilitation Foundation For The Disabled

12 Overlea Blvd., Toronto, Ontario M4H 1A4





Ontario

Ministry of
Community and
Social
Services

Parliament Buildings
Queen's Park
Toronto Ontario
M7A 1E9

March 6th, 1974.

Dear Sir/Madam:

The Ontario Ministry of Transportation and Communications has asked us (through their consultants Kates, Peat, Marwick and Co.) to assist them by sending you a questionnaire. The Ministry wants to use your answers, along with the answers of others, to improve transportation for the handicapped in this Province.

The questionnaire has been designed for those persons who have difficulty in using transportation in their area because of their handicap.

There are no right or wrong answers to any of the questions. What we are looking for are the answers that best describe your situation. Your assistance in answering all the questions will help the Ministry of Transportation and Communications understand transportation problems of the handicapped, so your co-operation is important to us.

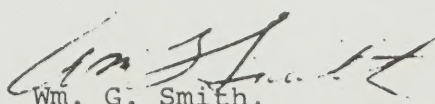
The return envelope provided does not need a postage stamp. Just answer the questions and put the questionnaire in the attached envelope. It will then be directed to the Ministry of Transportation and Communications.

All the information is confidential. It will be used for general information purposes only and there is no need to put your name on the questionnaire or the envelope.

If you are the trustee for a handicapped person we would appreciate it if you would forward the questionnaire on to him or complete it on his behalf.

Thank you for your assistance.

Sincerely,


Wm. G. Smith,
Director,
Provincial Benefits.

APR 26 1974

EXHIBIT A-6

RESPONSE RATE FOR MAIL-OUT QUESTIONNAIRE

| | NUMBER MAILED | NUMBER RETURNED COMPLETE | % RETURNED COMPLETE | |
|-------------------------------|------------------|-----------------------------|------------------------|-----|
| REHABILITATION FOUNDATION | 826 | 149 | 18% | |
| VOCATIONAL REHABILITATION | 1,657 | 359 | 21% | |
| FAMILY BENEFITS | 2,121 | 783 | 36% | |
| WORKMEN'S COMPENSATION | 1,247 | 855 | 68% | |
| TOTAL | 5,851 | 2,146 | 36% | |
| <u>TOTAL NUMBER RETURNED:</u> | | | 2,369 | 40% |
| (Complete and Incomplete) | | | | |
| | | | <u>% TOTAL RETURNS</u> | |
| REHABILITATION FOUNDATION | | | 7% | |
| VOCATIONAL REHABILITATION | | | 17% | |
| FAMILY BENEFITS | | | 36% | |
| WORKMEN'S COMPENSATION | | | 40% | |

